Administering Agilent 3070 Systems

MS Windows® NT® and 2000®

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Administering Agilent 3070 Systems (MS Windows NT and 2000)

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1

Introduction

In this Chapter...

About This Manual

Welcome to *Administering Agilent 3070 Systems (MS Windows NT and 2000)* This manual contains information for administering 3070 board test systems running on MS Windows® 2000 Professional and NT operating systems.

Use this manual as a guide for performing general 3070 system administration tasks. This manual does not describe general NT system administration.

Who Should Use This Manual

This manual is intended for anyone who performs system administration for 3070 MS Windows® systems. To perform the tasks described in this manual, you must have Administrator log in privileges on the systems you administer.

You should also have a basic working knowledge of MS Windows® NT or 2000 operating systems and experience in system administration.

Summary of System Administration Tasks

How Many Administrators are Necessary?

Ideally, a system should have one system administrator and a backup. It could be necessary to have one system administrator per shift.

Avoid maintenance conflicts by keeping as few system administrators as necessary.

Required Knowledge

Day-to-day tasks are required to keep a system running efficiently. Depending on the number of 3070 systems and the level of support needed, system administration can be either a part- or full-time job.

A 3070 system administrator should acquire basic knowledge of:

- the 3070 system hardware.
- the Agilent3070 directory structure and file system.
- the 3070 program software.
- the MS Windows® operating system.
- the Windows directory structure and file system.
- utilities for performing administration tasks, such as System Tools, Administrative Tools, and Backup and Recovery Tools.

Responsibilities

The system administrator's responsibilities include managing system installation, setup, configuration, networking, and security.

Be prepared to allow time for the training required to administer 3070 systems. Without adequate training, a system administrator has both the potential to solve problems and to make a system inoperable!

Administration Tasks

The system administrator routinely performs the following tasks:

- Installs and configures computer systems.
- Installs, configures, and connects computers to a network.
- Manages users and user accounts.
- Manages the file system and access permissions.
- Performs incremental and full system backups.
- Creates system recovery tapes (after installing software packages or changing the system's configuration).
- Recovers files from backups.
- Installs and manages peripheral devices.

3070 Software Overview

This section contains:

Introduction

XU700 testhead controllers are shipped with:

- The MS Windows® 2000 Professional operating system.

- LAN networking software.

- 3070 applications and programming software that includes languages for board test development and quality reporting.

Optional software features are available. For more information, contact your Agilent sales representative.

Capabilities of the MS Windows® 2000 Professional Operating System

- **File and resource sharing** – With a LAN, you can share files, disk resources, applications, computer systems, and peripheral devices over a network.

- **Multi-tasking** – Several programs, processes, and tasks can be performed at the same time.

- **System Administration Utilities** – MS Windows® 2000 Professional provides a set of System Tools and Administrative Tools to simplify system administration tasks.

NOTE

The 3070 MS Windows® system permits only single-user log on access to a testhead. Concurrent multi-user log ons are not supported by the operating system.

The Agilent 3070 Directory Structure

Table 1-1 describes the Agilent 3070 directories located under the <value in $AGILENT3070_ROOT>.

Table 1-1   Agilent3070 directories

Directory:	Directory Contents or Use
autofile	System autofiles
bin	3070 system executable programs
boards	Location for customer board directories.
contrib	User-contributed software (redistributed by Agilent)
dev	Device files and drivers used by the 3070 software
diagnostics	Test head configuration information and diagnostic programs
documentation	3070 user and service documentation
etc	Miscellaneous files
help	Help information
home	Default location for the user's home directories
lib	3070 executable libraries
library	Device libraries for board development
log	Log data
qm	Quality statistics and files used by Agilent Pushbutton Q-Stats

Table 1-1   Agilent3070 directories (continued)

Directory:	Directory Contents or Use
`standard`	Standard 3070 templates used throughout the system.
`tmp`	Where 3070 software stores temporary files/logs.
`util`	Utility files
`$NUTCROOT\usr\lib\X11\app-defaults\3070`	The directory containing X resource files for X applications. $NUTCROOT is a system variable set during installation of the NutCracker runtime environment. It contains the MKS Toolkit and Korn shell.

> **CAUTION**
>
> ⚠ NO NOT edit any files in these directories; they are not customer-editable.

Advantages of a LAN

Connecting 3070 systems together on a common LAN allows users to share peripherals and access files remotely. Programmers can edit testplans remotely from their local system without physically transporting the data. Without networking, a testplan file might have to be transferred via tape, then loaded onto the local system for editing.

Centralized storage of applications, testplans, and board data can reduce software maintenance costs and can maximize the integrity of the 3070 software. It can also simplify the process of revision and backup control.

3070 Program Software

Files and Directories

3070 systems come with directories, files, and utilities that are not a part of the MS Windows® operating system.

Test Programming Languages

The 3070 supports several test programming languages to develop board tests, including:

- **Board Test BASIC (BT-BASIC)** is a set of fundamental BASIC statements with many

additional test-oriented statements. BT-BASIC testplans are used to control and manipulate the board test system and to run tests on the circuit boards.

■ **Analog Test Language (ATL)** is a set of special statements used to make in-circuit measurements on analog devices.

■ **Vector Control Language (VCL)** is a set of statements used to write tests for individual digital devices (in-circuit testing).

Quality Reporting Software

The 3070 program software includes a datalogging feature and Pushbutton Q-STATS Quality Management Software for reporting board test results**.**

Datalogging automatically gathers test data on circuit boards, including board identification, failing component information, and measurement data on selected components. The logged information is stored in files used by Pushbutton Q-STATS, that generates informative reports which can be used to analyze board production processes.

Table 1-2   Standard 3070 Programs

Program	Use
BT-BASIC	Programming environment for editing and manipulating test programs.
Board Consultant	Data entry tool for defining, viewing, and editing board, device, and topology information.
Fixture Consultant	Graphical interface for viewing and editing fixture attributes such as wiring, probe locations, board placement, and fixture electronics.
IPG Test Consultant	Tool to develop and generate board test programs. Automatically generates test programs and files based on board description and attributes.
Part Description Editor	Graphical interface for defining electrical parts internal to higher level packages such as MCMs or resistor packs.
Pushbutton Debug	Graphical interface for debugging and modifying test programs.
Pushbutton Q-Stats	Quality management software for analyzing and evaluating test quality. Provides failure pareto charts, histograms, and production summaries.

Table 1-2   Standard 3070 Programs (continued)

Program	Use
Boundary-Scan	Graphical interface for testing digital devices that comply with IEEE Standard 1149.1.
Conversion Tool	Tool for converting board test programs and directories for cross-platform compatibility between HP-UX and MS Windows operating systems.
Korn Shell	Shell environment for executing UNIX commands on MS Windows operating systems.
SetUp Editor	Graphical interface for setting up and creating library tests.
Adobe Acrobat	Program for viewing, navigating, and printing PDF documents, including 3070 Documentation.
BootP Server NT	Program for controlling the allocation of IP addresses on the Windows NT platform.
SCO XVision	X windows environment.
TapeWare Administrator	Utility for backing up, restoring, and recovering files and system.
Internet Explorer	Internet browser.
WinZip	Utility for compressing and extracting files in ZIP format.

3070 Hardware Overview

This section provides an overview of 3070 test system hardware.

A complete test system includes a testhead and a testhead controller.

Testhead

The testhead contains hardware required to execute board tests.

Testhead Controller

The testhead controller is a computer that controls the testhead. It is located in a testhead pod.

2

Starting and Shutting Down the System

In this Chapter...

Starting the System

This section describes how to start and boot a 3070 MS Windows® controller and testhead.

- **Booting a 3070 Controller**, 2-2
- **Logging In**, 2-3
- **Booting the Testhead**, 2-3

Prerequisites

Before beginning, your Agilent 3070 system must be installed and set up correctly by an Agilent CE or SE.

Required Tools and Materials

- Windows® 2000 Professional Quick Start Guide
- A 3070 Testhead with Windows® 2000 Professional and software revision 3070 04.00pb 0501 WN or later.

Booting a 3070 Controller

1 Turn on the video display and any other peripherals.

2 Turn on power to the controller.

3 Allow the controller to boot.

During the boot process, the system:

- tests and initializes hardware components.
- loads the operating system.
- starts log on and other system services.

Read the messages displayed on the video monitor. These messages could be important in solving system administration problems.

The controller boot process is complete when the **Log on to Windows** screen appears.

> **ADVICE**
>
> The first time you start your system, you will need to enter information in the Windows 2000 Setup Wizard. Follow the on-screen instructions and refer to the **Windows® 2000 Professional Quick Start Guide**.

Logging In

Several types of logins exist for the 3070. Some logins can be created or changed by the system administrator (see **Adding a User Account** in Chapter 5) and some are for specialized use and cannot be changed.

Logins that cannot be changed include:

- `operator` — For standard operator use.

- `oil` — For operators using a localized operator interface which is converted to another language ("oil" stands for "operator interface localization).

- `service3070` — For troubleshooting hardware problems.

Booting the Testhead

1   Log in as `operator`

2   Boot the testhead using the Testhead Power On softkey.

Booting takes about 2 to 5 minutes, depending on the number of testhead modules in your 3070 system.

Shutting Down the System

This section contains:

> **CAUTION**
>
> ⚠ Unboot the testhead before shutting down the controller to prevent damage to the software.

Introduction

Shutdown a system before:

- Removing power to perform tasks such as installing a new disk or interface card.

Unboot the Testhead

- At the prompt in the BT-BASIC window controlling the testhead, enter:
  ```
  testhead power off
  ```

Shut Down the Controller

> **CAUTION**
>
> ⚠ Always shut down the computer before turning off the power. It is not safe to turn off the power until Windows displays the following message: **It is now safe to turn off your computer.** Interrupting the power without shutting down can damage the software or hard disk.

Use one of the following methods to shut down:

- Select **Shut Down** from the Start menu.
- Press **CTRL-ALT-DELETE**, click **Shut Down**, then select **Shut Down** in the **What do you want the computer to do?** list, and click **OK**.

Disconnecting Power to the Controller

> **CAUTION**
>
> ⚠ Perform this step only after following the above instructions to shut down the controller. Otherwise, software damage can occur.

- Push the power switch on the controller.

3

Setting Up and Configuring New Systems

In this Chapter...

Objectives

After completing this chapter, you should be able to:

- Set up your system for Windows® 2000 Professional

- Gather information for network configuration.

- Connect and configure a 3070 MS Windows® system to a LAN.

Prerequisites

- Experience administering NT® or MS Windows® operating systems.

Preparing to Set Up a System

Setting up a system involves establishing a computer name, user account, and both Administrator and user passwords. Use the Windows 2000 Setup Wizard to set up your system.

If you plan to connect your computer to a network, you must configure the appropriate Local Area Connections in Network and Dial-up Connections before connecting to your network.

After configuring Network and Dial-up Connections, use the Network Identification Wizard and follow the on-screen instructions to ensure that your system is recognized by your network.

Use this chapter to gather configuration information from the network administrator. Then, use this information to complete the tasks in the Setup and Network Identification Wizards.

> **NOTE**
>
> If you have a new test system that includes a testhead, an Agilent customer engineer (CE) or system engineer (SE) should be involved in the set-up.

Information for Windows 2000 Setup

The first time you start your system, the Windows 2000 Setup Wizard requests information to set up your computer. **Table 3-1** summarizes the information you may need to complete the Setup Wizard.

Table 3-1   Setup Information

Information	Description
Product Key	A 25-character key that uniquely identifies your copy of Windows 2000 Professional.
NOTE Agilent sets up product key information when you purchase a complete 3070 system.	
Computer Name	A unique name that identifies your computer system on a network.
Administrator Password	A password that provides access to the Administrator account for your computer with full permissions and control.

Setup Wizard Tasks

The Setup Wizard helps you complete these tasks:

- Accept or customize Regional Settings.
- Enter your Name and Organization.
- Enter your Computer name and Administrator password.
- Change the Date/Time settings and time zone.

Table 3-2 on page 3-5 describes how to set up MS Windows® 2000 Professional using the Setup Wizard.

> **NOTE**
>
> For instructions on setting up your system, logging on, and setting up user accounts, see the **Windows® 2000 Professional Quick Start Guide**.

> **CAUTION**
>
> Some customers change **Regional Options** on the controller to set **Your locale** to their geographic location. Is is alright to do this as long as you don't change **Decimal symbol**. The **Decimal symbol** must remain a period (.); it cannot be changed to a comma (,) or Board Consultant will break testplans.

Setting Up Windows 2000 Professional

Follow the procedure in **Table 3-2** to setup your Controller for Windows® 2000 Professional.

Table 3-2   Setup Windows® 2000 Professional

Task	Step
1 Verify:	• All cable connections to the controller.
2 Turn on power to the controller.	
3 Complete the Windows 2000 Setup Wizard tasks. **ADVICE** To change the Administrator password: Point to **Settings > Control Panel > Users and Passwords,** choose Administrator from the User Name list, then press **Ctrl+Alt+Del** and select **Change Password**.	**a** Read the Welcome screen, then click **Next**. **b** Accept or customize Regional Settings, then click **Next**. **c** You can change the Regional Settings for numbers, currency, time, date, locale, and keyboard layout. **d** Type your Name and the name of your Organization, then click **Next.** **e** Type your Computer name and Administrator password, then click **Next.** This Administrator password is associated with the Administrator account that is local to your computer. This account and password provide full control of your computer. Do not forget this password. **f** Set the correct Date & Time and Time Zone, then click **Next.** **g** Click **Finish**. The Setup Wizard will restart your computer and apply the new settings.
Congratulations! You have configured the Windows controller for startup.	

Additional Setup Tasks

The tasks in **Table 3-3** should be completed before the system is ready for users.

Table 3-3   Additional setup tasks

Task	Step
1 Enter codewords to enable optional software features if necessary:	Agilent 3070 test development systems support standard and optional software features that are licensed with Software Certificates. Optional software features are enabled by entering unique codewords found on Software Certificates. **CAUTION** ⚠️ You must have a license to add codewords that enable optional software features. Instructions for installing codewords are included with the software license included with the shipment or the optional software. Enter the codeword(s) exactly as appearing on the license. Also see the document *Installing Codewords on a 3070* (E1040-90000).

Table 3-3   Additional setup tasks

Task	Step
2 Create a system recovery tape.	It is very important to make a full back up tape that can be used to recover your system in case of a disaster such as a disk crash. For instructions, see **Making a Full Backup Tape** on page 4-9. Re-establish the `bootptab` and system `config` files from backup files. If these files were not backed up, contact your Agilent systems engineer.
3 Ensure that the Administrator password is not lost or forgotten.	

Gathering Network Configuration Information

Use this section to gather the information needed to configure your computer for a LAN.

Gather the Network Configuration Information

Complete the information in **Table 3-4** with the assistance of the network administrator or LAN manager.

Table 3-4   Windows NT LAN configuration information

Task (Network Parameter)	Write System Information Here	Description
1 Network Identification ■ Computer Name, or ■ Hostname	Domain Computer Name or Hostname: _____	A unique name that identifies your computer controller.
2 Network Identification ■ Workgroup or Domain?	Member of (select one): [ ] Workgroup [ ] Domain Workgroup or Domain name _____	The Workgroup name is the name of a computer or group of computers on a peer-to-peer network. The Domain name is the identifier for the server that controls and manages a group of computers on a client/server network.
3 Network Identification ■ Create a Computer Account in the Domain	Domain User Name: _____ Domain Password: _____	This is the name by which your computer is recognized by the network domain. See your network administrator to establish or verify domain account information.
4 Will a DHCP Server be Used?	[ ] Yes [ ] No	If yes, go to **Task 16** (**Will Other Network Protocols Be Configured?**).

Table 3-4   Windows NT LAN configuration information (continued)

Task (Network Parameter)	Write System Information Here	Description
5 IP Address	IP Address: _____ . _____ . _____ . _____ Subnet Mask: _____ . _____ . _____ . _____ Default Gateway: _____ . _____ . _____ . _____	The IP address for this workstation. This number masks (ignores) information that is not specific to your local network. IP address of the system that is used to route network traffic to other networks.
6 Advanced IP Addressing ■ Gateways	_____ . _____ . _____ . _____ _____ . _____ . _____ . _____	Gateway(s) for any backup routers of network traffic.
7 Will DNS be Used? (Domain Name System)	[ ] Yes [ ] No	If no, go to **Task 12** (**Will WINS Be Used?**).
8 DNS ■ Hostname	_____	The name by which this system will be known under DNS is the same as the **Computer Name, or** in **Task 1**.
9 DNS ■ Domain	_____	The domain in which this machine will operate. This domain is associated with your TCP/IP address.

Table 3-4   Windows NT LAN configuration information (continued)

Task (Network Parameter)	Write System Information Here	Description
10 DNS ■ DNS Service Search Order	———.———.———.——— ———.———.———.———	IP Addresses (in order) of DNS servers that this system uses for resolving host names.
11 DNS ■ Domain Suffix Search Order	——————————— ———————————	Ordered domain suffix list used when searching for a host.
12 Will WINS Be Used? (Windows Internet Name Services)	[ ] Yes [ ] No	If no, go to **Task 16** (**Will Other Network Protocols Be Configured?**).
13 WINS Address ■ Primary WINS Server ■ Secondary WINS Server	———.———.———.——— ———.———.———.———	
14 WINS Address ■ Checkboxes	[ ] Enable DNS for Windows Resolution [ ] Enable LMHOSTS Lookup	Check or uncheck either of these boxes as applicable. **CAUTION** ⚠ If configuring for DNS, check **Enable DNS for Windows Resolution**.

Table 3-4   Windows NT LAN configuration information (continued)

Task (Network Parameter)	Write System Information Here	Description
15 WINS Address ■ Scope ID	_____	
16 Will Other Network Protocols Be Configured?	[ ] AppleTalk Protocol [ ] DLC Protocol [ ] NetBEUI Protocol [ ] NWLink IPX/SPX Compatible Transport [ ] Point To Point Tunneling Protocol [ ] Streams Environment	This list is not exhaustive; other protocols can be configured. Use this space to document other network protocol information.

Network Components

Making a network requires the following basic hardware, software, and connections:

- **Network interface cards (NICs)**, or adapter cards - used to connect a computer to a file servers or workstations.

- **Cables** - used to connect the nodes on a LAN.

- **Physical topology** - the physical location of all computers on the network and the cabling system that connects them.

- **Servers** - the computer that manages and controls network resources.

- **Network Operating System** - Windows® 2000 Professional is the supported operating system for your 3070 MS Windows® system.

- **Network-based software** - programs that are accessed over the network. May include e-mail programs or standard software applications.

Agilent Software License Activation

Codeword and License Management

Agilent will begin issuing license keys to replace the current codeword scheme for new 3070 features starting with software release 05.20p. At present, only new features will require the license key. This is the first step in a process that will eventually replace all Agilent 3070 codewords with license keys in future software releases.

Required Tools and Materials

Before you contact Agilent to activate your software license key, you will need the following:

■ Agilent 3070 software revision 05.20p or newer,
■ entitlement certificate which contains the order number and certificate number,
■ hardware (MAC) address of the target controller or test development station which will utilize the software activation key,
■ Agilent serial number from your controller (if the controller was not supplied by Agilent, use the controller manufacturer's serial number),
■ internet connection[*].

You will receive an Entitlement Certificate with a new system or when new features are purchased. You will need the information on the Entitlement Certificate to redeem your license activation key on upgrades, new features, or for recovery.

NOTE

New systems shipped from the factory will have the software license keys installed and activated.

The Software Entitlement Certificate evidences Agilent Technologies' grant of the right to use the software products listed on the certificate. Please refer to your Software License and Software License Redemption Certificate for information regarding Agilent's Software Terms and Conditions of Use.

Each license redeemed from this certificate authorizes the use of the software product on one system controller or one test development system.

NOTE

The Entitlement Certificate is an important document - you will need to keep it for your records. You will need it to activate or recover your software licenses.

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[*] If you cannot access the internet, call the Agilent Customer Support Center at 1.800.447.8378 for assistance.

Figure 3-1   Software License Activation Process Flow Diagram
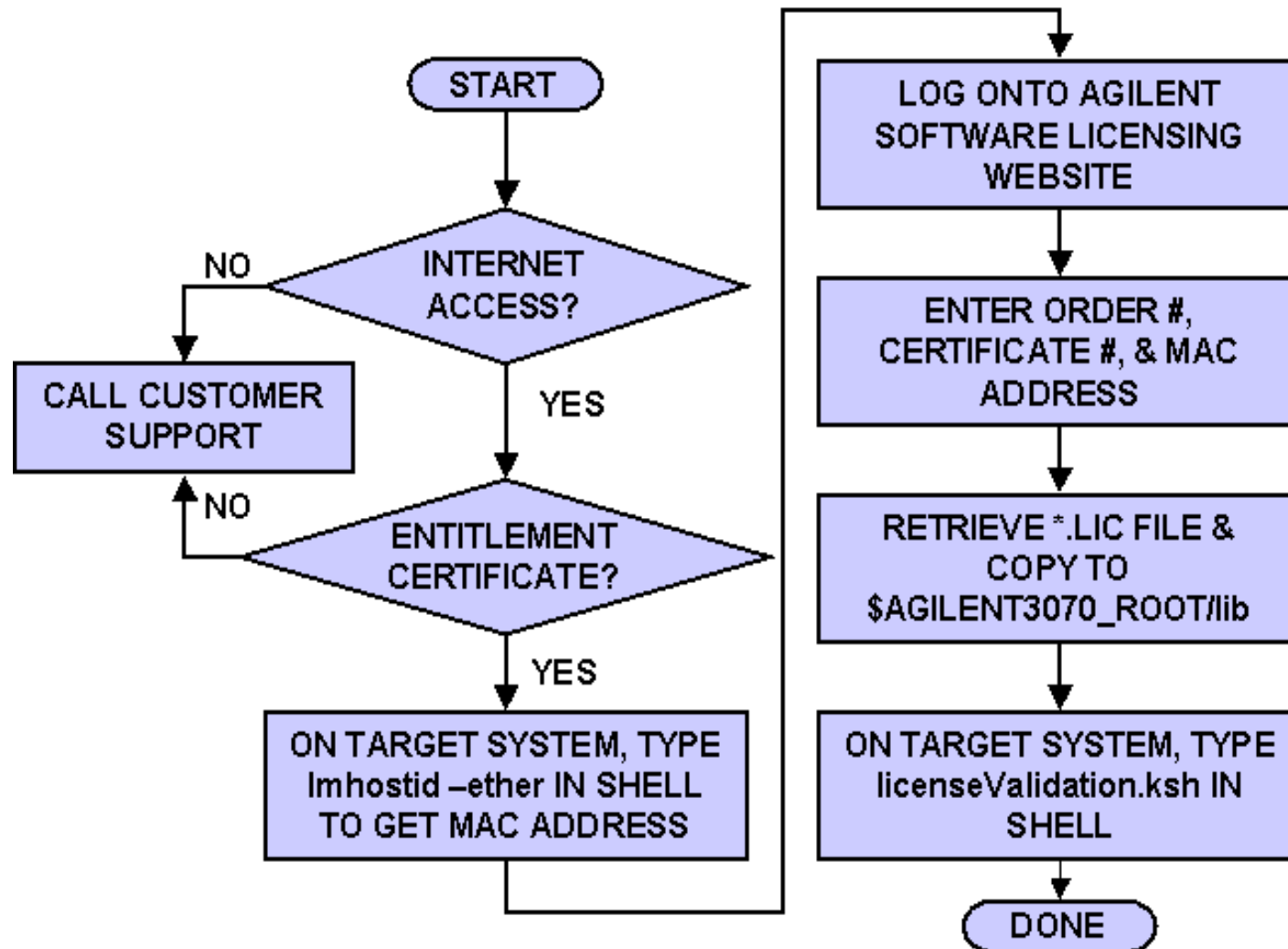
Redeeming your Software License

To redeem your software license, perform these steps:

1 Acquire the target controller or test development system's hardware (MAC) address.

   a Login to the 3070 controller or test development system as administrator. This must be the system where you intend to activate the license,

   b Open a korn shell window and type `lmhostid -ether`. Hit Return,

   c This command will return the hardware or MAC address for the targeted system. Write down and save the 12-character string that is displayed after `The FLEXlm host ID of this machine is:` You will need this string in step 2e.

> **NOTE**
>
> The MAC Address (Media Access Control) is a hardware address that uniquely identifies each node of a network. Agilent Software Licensing takes the MAC address and locks the Software License Key to the targeted system controller or test development system.

2 Redeem the software entitlement certificate and receive your license activation key.

   a From any computer with internet access, log onto the Agilent Software Licensing website at `www.agilent.com/find/softwarelicense`. Follow the instructions on the website to redeem your license. This website has excellent online help to assist you with redemption of your software license.

> **NOTE**
>
> If you do not have Internet access or cannot contact Agilent through this website, contact the Agilent Customer Support Center at 1.800.447.8378 for assistance.

   b In the space provided, enter the Order Number from the Entitlement Certificate,

   c In the space provided, enter the Entitlement Certificate number. Hit Enter or select `Search`.

   d The next window will provide you with three options. Select option `I. Request license(s) for one or more software products on one instrument or host computer`. The next window will display your order number and software certificate at the top of the page.

e Follow the instructions listed below the certification number. Where it says `Enter Node ID`, type the 12-character hardware (MAC) address for the target system which you recorded in **Step 1c**.

f Enter the Agilent serial number from your controller (if the controller was not supplied by Agilent, use the controller manufacturer's serial number

g In the space provided, enter an email address where you can retrieve the license file. You will receive the license file via this email address from license_support@agilent.com. The email will contain a message with instructions for installing the license file onto the 3070.

You may also view the license with your internet browser. Return to the main screen and select `option III: Get previously issued licenses for this order`.

Software License Activation

3 Activate your Software License Key

a Open the email and save the attachment license key in the $AGILENT3070_ROOT/lib directory on your 3070 controller or test development computer.

b Rename the license file attachment using a unique name. For example you could use a date-name format like agilent3070_`<date>`.lic, where `<date>` is the `YYYYMMDDHHMM` (YYYY is the year, MM is the month; DD is the day and HHMM is the current time. Change the file extension to `.lic`.

NOTE

Ensure the License File ends with a `.lic` file name extension. If the file does not have a `.lic` extension, manually change it to `.lic`.

Validate Software License Key

1 Run the 3070 Software License Validation Application by typing `licenseValidation.ksh` in a korn shell window. Hit return.

2 Select the Test License button. License file entries that have valid data are shown in green font. Invalid license file entries are highlighted in red font.

3 Select the `Close` button or select to exit the 3070 Software License Validation application.

Software License Activation Troubleshooting

If for some reason you can no longer use the license key after activation, use the following recovery process. Loss of the software key may be due to:

■ hardware modification or replacement including controller, hard drive, LAN card, etc.

■ inadvertent license file deletion,

1 Locate your software entitlement certificate and reconfirm your license activation key.

   a From any computer with internet access, log onto the Agilent Software Licensing website at `www.agilent.com/find/softwarelicense`. Follow the instructions on the website to redeem your license.

> **NOTE**
>
> If you do not have Internet access or cannot contact Agilent through this website, call your local Agilent representative or call the Agilent Customer Support Center at 1.800.447.8378 for assistance.

   b In the space provided, enter the Order Number from the Entitlement Certificate for the feature you wish to reactivate.

> **NOTE**
>
> If you do not have the entitlement certificate and order number, you will not be able to retrieve your software activation key through the Agilent Software Licensing website. You will need to call the Agilent Customer Support Center at 1.800.447.8378 for assistance.

   c Enter the Entitlement Certificate number in the space provided. Hit Enter or select `Search`.

   d Select `option III Get previously-issued licenses for this order number`.

   e Right click on the file listed and choose `Save Target As` to retrieve the license file,

   f save the license key file in the $AGILENT3070_ROOT/lib directory on your 3070 controller or test development computer.

> **NOTE**
>
> This process will only work for the same MAC address to which the original license was submitted. If no license history is found or you cannot locate your entitlement certificate, contact your local Agilent representative or call the Agilent Customer Support Center at 1.800.447.8378 for assistance.

Configuring a Network Adapter Card (Local Area Connection)

A 3070 MS Windows® system includes two network adapter cards: a 3Com Etherlink XL 10/100 PCI and a Realtek RTL8139(A)-based Fast Ethernet Adapter. Agilent configures the **Local Area Connection** for the 3Com Etherlink XL 10/100 PCI to connect only to the testhead. Never change these settings.

The **Local Area Connection** for the Realtek RTL8139(A)-based Fast Ethernet Adapter can be configured and connected to your site network. Contact your network administrator for assistance in configuring adapter cards and connecting to a site network.

Table 3-5 describes how to configure a network adapter card (Local Area Connection 2).

> **ADVICE**
>
> Gather the networking configuration information in **Table 3-4** before performing the procedure in **Table 3-5**.

Table 3-5   Configuring and Connecting a Local Area Connection

Task	Step
1 Open the **Network and Dial-up Connections** window.	**a** On the Desktop, right-click **My Network Places.** **b** Click **Properties.**
2 Display the Local Area Connection 2 Properties.	**a** Right-click **Local Area Connection 2,** **b** Click **Properties**.

Table 3-5 Configuring and Connecting a Local Area Connection (continued)

Task	Step
3 Verify that the list of **Components checked are used by this connection:** includes:	• Client for Microsoft Networks • File and Printer Sharing for Microsoft Networks • NetBEUI Protocol (optional) • Internet Protocol (TCP/IP) **NOTE** The Internet Protocol (TCP/IP) is required by the testhead controller.
4 Specify IP Addresses.	**a** Select **Internet Protocol (TCP/IP),** then click **Properties**. **b** Click **Obtain an IP address automatically**. Use this step if your domain server supports DHCP. If DHCP is not supported, manually enter IP address information: Click **Use the following IP address**, then type the **IP address**, **Subnet mask**, and **Default gateway** numbers.
5 Specify DNS server addresses.	**a** Select **Obtain DNS server address automatically**, or **b** Click **Use the following DNS server addresses:** and type the **Preferred DNS server** and an **Alternate DNS server**.

Table 3-5   Configuring and Connecting a Local Area Connection (continued)

Task	Step
6 Add or edit configuration information. **ADVICE** Contact your IT department for configuration information and assistance.	Click **Advanced** to add or edit: • IP addresses • Gateways • DNS server addresses • WINS addresses • or to specify security options.
7 Accept the configuration.	• Click **OK**.
8 Connect the LAN cable.	• Agilent provides an RJ45 LAN cable. Physically connect the LAN cable to your network connection.

Table 3-5   Configuring and Connecting a Local Area Connection (continued)

Task	Step
9 Run the Network Identification Wizard.	**a** Right-click **My Computer**, then click **Properties**.
	b Click the **Network Identification** tab in the System Properties dialog box, then click **Network ID.**
	c Enter the appropriate information in the **Network Identification Wizard**. This wizard identifies your computer to the network. Be prepared to enter the following information, as needed:
	■ Is this computer part of a network?
	■ What kind of network? (domain or workgroup?)
	■ User name
	■ Password
	■ User account domain
	■ Computer name
	■ Computer domain
	■ Workgroup name
10 Reboot the system.	After rebooting, verify the network connection. Contact your network administrator if you experience problems.

4

Backing Up and Restoring System Software

NOTE

If you need to recover data and already have boot recovery diskettes, and a full backup tape go to:

- **Restoring Selected Data from a Backup Tape** on page 4-14 or

- **Restoring a 3070 System from a Full Backup Tape** on page 4-19

Introduction

A disaster recovery plan, and backup disks and tape(s) are necessary to protect your system and data against hardware failures, corrupted data, or accidental deletion of files. Your 3070 system includes TapeWare software with Backup, Restore, and Disaster Recovery tools.

Objectives

After reading this chapter, you should be able to:

■ Create a backup strategy.
■ Create boot Recovery Diskettes.
■ Create a Full backup tape.
■ Restore selected data from a backup tape.
■ Boot your system from Recovery Diskettes and use a full backup tape to restore system software and data.

Prerequisites

■ Experience administering Windows systems.

■ Administrator log on privileges.

Required Tools and Materials

- TapeWare software with Disaster Recovery.

- An HP SureStore DAT 24 tape drive or compatible DDS storage device.

- Four (4) blank 3.5" diskettes and 24Gb blank tape (Included with the system.)

Planning a Backup Strategy

Data is sometimes lost when a user accidentally deletes or overwrites a file, or misuses a command. Also, a power failure or hard disk crash can result in lost or corrupted data. Data can be restored if you use effective backup procedures.

One of the most important responsibilities of the system administrator is to implement an effective backup strategy. The backup strategy you use to protect from data loss depends on a number of variables:

- How frequently is the system used?

- How often does the data change?

- How critical is it that files can be restored quickly?

One typical three-tiered backup strategy follows:

1 **Make a new set of boot Recovery Diskettes for booting your system periodically, as magnetic media can deteriorate. Also, create a new set every time you:**

- install new software or update existing software or operating system.

- add or remove users.

- change logical volumes in any way.

- change the Windows Administrator password.

For instructions, see **Creating Boot Recovery Diskettes** on page 4-6.

2 **Create a full system backup once each week.**

NOTE

You can recover individual files from a full or partial backup tape.

For instructions, see **Making a Full Backup Tape** on page 4-9.

3 **Create an incremental backup once each day.**

Incremental backups are faster to create than full backups, and they require less backup media. However, recovering a system may require several backup tapes: the full backup, in addition to multiple incremental backups.

Preparing for Disaster Recovery

If you have an Industrial PC, see**Disaster Recovery for an Industrial PC Controller**

If your system fails, it is important to be prepared for disaster recovery. To recover your 3070 operating system, application software, and files, you need:

- A DDS tape drive connected to your 3070 controller.

- TapeWare software with Disaster Recovery.

- The boot diskettes you will create or have created by following procedure described in **Creating Boot Recovery Diskettes** on page 4-6.

- A full backup tape, preferably very recently created. See **Making a Full Backup Tape** on page 4-9.

WARNING

⚠️ You must create full backup tapes regularly to prepare for disaster recovery. If you do not have a recent full backup tape, you may lose important data in the event of a disk failure.

Disaster Recovery for an Industrial PC Controller

This information applies to 3070 systems with Industrial PC (IPC) controllers with DVD drives.

Backup vs. Disaster Recovery

Backup is the copying of files (board directories) to a removable media or network. Disaster recovery is the process of restoring the system to operational readiness after a major catastrophe like a hard disk failure.

For backup you can use File Explorer for copying to a network device, or HP RECORD NOW to copy the files to a removable media like CD or DVD. These files can then be copied back to the hard drive as needed.

Disaster Recovery Solution

Provided for your 3070 system, is a separate software package called PowerQuest Drive Image. This software allows you to:

- Backup without leaving Windows

- Backup to the DVD drive

- Restore your entire system or individual files

- Schedule automatic backups

Agilent recommends that you install this software and use it to make full backups of your hard drive.

This software is provided as a third-party software solution. Agilent is not responsible for support of this product. Refer to the support information in the documentation accompanying the PowerQuest product.

IN NO EVENT WILL AGILENT OR ITS SUPPLIERS BE LIABLE FOR LOSS OF DATA OR FOR DIRECT, SPECIAL, INCIDENTAL, CONSEQUENTIAL (INCLUDING LOST PROFIT OR DATA), OR OTHER DAMAGE WHETHER BASED IN CONTRACT, TORT, OR OTHERWISE.

Creating Boot Recovery Diskettes

Introduction

■ Your 3070 system includes a set of blank diskettes that should be used at the initial system setup to create boot disk Disaster Recovery diskettes.

When to Create Boot Recovery Diskettes.

Create a new set of boot Recovery Diskettes when you:

■ initially setup your 3070 controller.

■ update your operating system or software.

■ install new service packs.

■ add or remove hardware.

■ change the configuration of your disk drives.

■ add or remove disk drive volumes or partitions.

ADVICE

Always create two or more sets of boot Recovery Diskettes, in case one set of disks becomes corrupted or unreadable.

Required Tools and Material

■ TapeWare- a program for backing up recovering, and restoring system data and files.

■ Disaster Recovery Wizard - a TapeWare application.

■ At least four blank formatted 3.5" floppy diskettes, depending on your system configuration.

How to Create Boot Recovery Diskettes

Table 4-1 describes how to create a set of boot Recovery Diskettes.

Table 4-1   How to create boot Recovery Diskettes

Task	Step
1 Log on as Windows Administrator.	**a** Press **Ctrl-Alt-Del** to log on. **b** The default **User Name** is Administrator. Click **OK**. No password is necessary when you receive your 3070 system. After you establish an Administrator account, you must enter the password.
2 Start TapeWare.	• Double-click the **TapeWare Administrator** icon on your desktop, or • from the **Start** menu, point to **Programs > TapeWare > TapeWare Adminis-trator.**
3 Log on to TapeWare as ADMIN.	**a** The default **User Name** is ADMIN. **b** No password is necessary when you receive your 3070 system. After you establish ADMIN accounts, you must enter the **Password**, then click **OK**.
4 Create new boot disk Recovery Diskettes for booting and recovering your system.	**a** Click **Disaster Recovery** from the TapeWare Wizard tab. **b** Click **Make Diskettes**, then click **OK** in the Disaster Recovery window. **c** Insert a formatted 3.5" inch disk into the floppy disk drive. The program copies data and prompts you to **Insert new disk Recovery Diskette 2**. **d** Insert new disks, as prompted until you have created a complete set of Recovery Diskettes.

Table 4-1 How to create boot Recovery Diskettes (continued)

Task	Step
5 Label each boot Recovery Diskettes.	Include: • A disk name and number (example: boot disk Recovery Diskette 1 of 4) • The date created. • The operating system revision. • The computer system name.
6 Write protect each boot Recovery Diskette and store in a secure location.	

Making a Full Backup Tape

Overview

Your 3070 system includes an HP SureStore DAT 24 tape device and TapeWare software for performing data backups. This section describes how to perform full data backups using the TapeWare Wizard and a system compatible DDS tape drive.

A full backup tape can be used to recover your operating system, application software, and data files. An effective disaster recovery policy involves creating full backup tapes on a regular basis.

Prerequisites

Before performing data backups, determine:

■ the device file of the storage device on which to create your backup.

■ the disk drives, folders, and files to backup.

■ when the backup should occur.

■ the type of backup. Options include:

- **Full** - backup all selected drives, folders, and files.

- **Incremental** - backup only files that have changed since the last backup of any type: Full, Incremental, Differential, or Snapshot.

- **Differential** - backup only files that have changed since the last Full backup.

- **Snapshot** - backup all selected drives, folders, and files without updating archive flags.

Required Tools and Materials

To perform the backup procedures described in this section, you need:

■ TapeWare software.

■ An HP SureStore DAT 24 tape drive or system compatible tape device.

■ A DDS tape with enough capacity to perform a full backup. 24 Gb or more is recommended.

How to Make a Full Backup Tape

Table 4-2 describes how to make a full backup tape using the TapeWare Wizard, which may be used for disaster recovery or restoring selected data.

Table 4-2   How to make a full backup tape

Task	Step
1 Log on as Windows Administrator.	**a** Press **Ctrl-Alt-Del** to log on.
	b The default **User Name** is Administrator. Click **OK**.
	No password is necessary when you receive your 3070 system. After you establish an Administrator account, you must enter the password.
2 Start TapeWare.	• Double-click the **TapeWare Administrator** icon on your desktop, or
	• From the **Start** menu, point to **Programs > TapeWare > TapeWare Administrator.**
3 Log on to TapeWare as ADMIN.	**a** The default **User Name** is ADMIN.
	No password is necessary when you receive your 3070 system. After you establish ADMIN accounts, you must enter the **Password**, then click **OK**.
4 Start and name backup job.	**a** Click **Backup Local Machine** in the TapeWare Wizard tab.
	b Type a job name in the Wizard - Welcome window, then click **Next.**
	ADVICE
	Create a job name that is easy to identify, such as the computer or device name and the backup date.

Table 4-2   How to make a full backup tape (continued)

Task	Step
5 Select a backup tape device.	**a** Insert a blank DDS tape into a tape device that is connected to your system.
	b Select a backup tape device in the Wizard - Where window, then click **Next.** TapeWare will copy selected data to the tape in the selected device.

Table 4-2 How to make a full backup tape (continued)

Task	Step
6 Select the type of backup to perform.	• Click **Full** in the Wizard - How to Backup window, then click **Next.**
7 Select how data will be written to tape.	• Select **Overwrite all tapes that are accessible** in the Wizard - How to Write window.

	NOTE
	The default option is **Append to any tapes that are accessible**. If you are creating a backup tape to be used for disaster recovery, select the **Overwrite** option.

Table 4-2   How to make a full backup tape (continued)

Task	Step
8 Choose a data verification option.	• Select a verification option in the Wizard - How to Verify window. Full verify is recommended for a full backup. Then click **Next**. Options include: **No verify** - Do not verify data. **Full verify** - Verify data on tape matches exactly data on hard drive. **Quick verify** - Verify data on tape is readable. **NOTE** Full verify compares all files on the backup media to the files on the server or workstation and ensures that they are identical. Any files that are not identical will be reported in error messages.
9 Specify when to run the backup job.	• Select **Now** in the Wizard - When to Run window, and then click **Finish**. You can also save the job or schedule it to run later by selecting **Save the job, but don't run it now** or **Later.** **NOTE** It may take one hour or more to complete a full backup job. A **Status of Backup Local Machine** window displays the job's progress.

Restoring Selected Data from a Backup Tape

This section describes the procedures for restoring selected data from a backup tape using TapeWare's Restore Specific Wizard. Use this wizard to selectively restore data from individual drives, folders, or files.

For instructions on restoring an entire system, see **Restoring a 3070 System from a Full Backup Tape** on page 4-19.

Restoring Specific Data

You can use a full or partial backup tape to selectively restore data to your system. **Table 4-3** on page 4-14 describes how to restore specific data from a backup tape.

Table 4-3   How to recover specific data from a backup tape

Task		Step	
1	Log on as Windows Administrator.	**a**	Press **Ctrl-Alt-Del** to log on.
		b	The default **User Name** is Administrator. Click **OK**.
			No password is necessary when you receive your 3070 system. After you establish an Administrator account, you must enter the password.
2	Start TapeWare.	**a**	Insert the backup tape into the tape drive. Use either a full or partial backup tape that contains the data you want to recover.
		b	Double-click the **TapeWare Administrator** icon on your desktop, or
			from the **Start** menu, point to **Programs > TapeWare > TapeWare Administrator.**
3	Log on to TapeWare as ADMIN.	**a**	The default **User Name** is ADMIN.
			No password is necessary when you receive your 3070 system. After you establish ADMIN accounts, you must enter the **Password**, then click **OK**.

Table 4-3   How to recover specific data from a backup tape (continued)

Task	Step
4 Start the **Restore Specific** program and name the job.	**a** Select the TapeWare Wizard tab and click **Restore Specific**. **b** Type a job name, then click **Next**.

Table 4-3   How to recover specific data from a backup tape (continued)

Task	Step
5 Select what to restore.	• Select the computer, drives, folders, or files that you want to restore in the Wizard-What to Restore window. Click in the checkboxes next to the device or folder names you want to select. Then click **Next.**
	You can expand or collapse devices and folders to view the structure. A folder with a plus sign indicates it can be expanded to view more folders. A folder with a minus sign can be collapsed.
	A check mark indicates an item has been selected. Selected data will be restored to its original location.

Table 4-3 How to recover specific data from a backup tape (continued)

Task	Step
6 Choose a tape device from which to restore data.	**a** Select the device or folder name that represents a tape device connected to your system. If necessary, expand or collapse devices and folders until you can view and select the desired device. **b** Click **Next.**

Table 4-3 How to recover specific data from a backup tape (continued)

Task	Step
7 Specify when to run the restore job.	**a** Click **Now**, if you want to run the job immediately.
	Click **Save job, but don't run it now** to save the job to a file.
	Click **Later** if you want to schedule the job to run later, and follow the onscreen instructions to specify when the job should run.
	b Click **Finish**.
	NOTE
	TapeWare displays the status of the job in the **Status of Restore Specific** window.

Restoring a 3070 System from a Full Backup Tape

Introduction

For instructions on restoring selected data, see **Restoring Selected Data from a Backup Tape** on page 4-14.

Restore from full backup or a disaster recovery tape only if:

■ the operating system will not boot.

■ the main system disk drive fails.

■ the entire file structure is corrupted or lost.

CAUTION

⚠️ If you are restoring a system from a disaster recovery or full backup tape, TapeWare erases and reformats all disk drives, reinstalls the operating system, and overwrites the hard disk drives with data from the backup or disaster recovery tape.

NOTE

When you received your system you should have made recovery media by following the procedures in sections **Creating Boot Recovery Diskettes** on page 4-6 and **Making a Full Backup Tape** on page 4-9. If you did not do so, contact your Agilent board test representative.

Prerequisites

The disaster recovery process requires:

■ Administrator log on privileges for your 3070 Windows system.

■ ADMIN log on privileges for TapeWare

Required Tools and Materials

To restore your system after a system failure or disk crash, you will need:

- TapeWare software with Disaster Recovery.

- An HP SureStore DAT 24 tape drive or system compatible tape device.

- A set of boot Recovery Diskettes created at system installation or later.

- A full backup tape created at system installation or later or very recently.

Disaster Recovery Procedure

If the hard drive becomes corrupted so that the controller will not boot, you must boot from a set of boot Recovery Diskettes. Booting from Recovery Diskettes starts TapeWare's disaster recovery program.

The disaster recovery process involves using the boot Recovery Diskettes:

- to boot the MS Windows 2000 operating system.

- to start TapeWare's disaster recovery program.

- with a full backup tape to restore your system.

Use the boot Recovery Diskettes and a full backup tape to recover your 3070's operating system, software applications, and files.

The boot Recovery Diskettes enable you to boot your system and run TapeWare's disaster recovery program, **Recover.exe**. This option should be used only as an emergency measure because it:

- removes all the files from the hard drive.

- reformats the hard drive.

- re-installs MS Windows 2000 and 3070 software applications.

CAUTION

⚠ All files on the drive to be recovered will be overwritten!

You can use TapeWare to recover a boot disk or to recover all disk volumes and partitions. **Table 4-4** describes the disaster recovery options you can select when you boot your system from the boot Recovery Diskettes. You must use both the boot recovery diskettes and a full backup tape to restore your system.

Table 4-4   TapeWare Disaster Recovery Options

Available Options	Description
Recover Boot Disk	Recover main boot disk. Recover all volumes and partitions from the boot disk.
Recover Entire System	Recover entire system, including all volumes and disks.
Exit From Disaster Recovery	Exit from disaster recovery procedure without recovering system or overwriting data on tape.

How to Restore a System From a Full Backup Tape

Table 4-5 describes how to restore a 3070 system from boot recovery diskettes and a full backup tape.

> **NOTE**
>
> Use only a complete and recent full backup tape as a disaster recovery tape.
>
> You can make other types of backups, such as **Incremental**, **Differential**, or **Snapshot**. These types of backups can be used to a recover a partial system or individual files, but cannot be used to restore an entire system.

Table 4-5   How to restore a system from a disaster using boot recovery diskettes and full backup tape

Task	Step
1 Boot from Recovery Diskette 1 and begin **TapeWare Disaster Recovery (Phase 2)** **Recovery Diskette 1** contains **Recover.exe**, the TapeWare application that initiates the Disaster Recovery process.	**a** Insert Recovery Diskette 1 in your floppy drive. **b** From the Start menu, choose Shutdown, select Restart and Click Yes.
2 Insert the most recent full backup tape in the tape drive. **NOTE** TapeWare restores your system by copying data from the disaster recovery tape to your system. The data is restored in its original location on the hard drive.	**NOTE** If a full backup exists on multiple tapes, you must have all backup tapes to fully restore your system.

Table 4-5　　How to restore a system from a disaster using boot recovery diskettes and full backup tape (continued)

Task	Step
3 Choose a recovery option. Available options include: ■ Recover Boot Disk ■ Recover Entire System ■ Exit from Disaster Recovery	**WARNING** ⚠ Use this option to recover all hard disks on your system. NOTE: All data on the drives to be recovered will be overwritten. **a** Press the **DOWN ARROW** key to select **Recover Entire System** from the Available Options box, then press **Enter.** **NOTE** If you have placed board files on another disk drive, and you suspect that only your boot disk is corrupted or you have had to replace the boot disk, you may attempt to recover the boot disk only. This will leave all data on other disks intact. However, this may cause data to be overwritten on other disks as well. It is recommended that you select Recover Entire System. **b** Several messages appear on screen. Read each screen and press **Enter** to continue.

Table 4-5   How to restore a system from a disaster using boot recovery diskettes and full backup tape (continued)

Task	Step
4 Overwrite existing partitions on the hard disk drive. **WARNING** ⚠ This option overwrites all disk volumes and partitions with the data from the disaster recovery tape or backup tape.	**a** Press **F10** to overwrite existing partitions, or Press **ESC** to return to the main menu without recovering the system or its volumes. **b** Press the **UP ARROW** key to choose **Yes, Recover the Entire System** and press **Enter**. To return to the main menu, use the arrow keys to select **No, go back** and press **Enter**. **c** This message appears: **THIS IS YOUR LAST CHANCE, ARE YOU SURE?** If you want to recover your entire system and all its volumes, select **Yes, Perform the Recovery**, then press **Enter**. To exit and return to the main menu, select **No, go back** and press **Enter**.

Table 4-5   How to restore a system from a disaster using boot recovery diskettes and full backup tape (continued)

Task	Step
5 Insert the remaining Recovery Diskettes when prompted. **NOTE** After completing these steps, it takes approximately 30 minutes to one hour to restore your system.	**NOTE** Your system may automatically reboot several times after the restart process. **a** Insert **Recovery Diskette 2**, then press **F10**. **b** When prompted, remove **Recovery Diskette 2** and insert **Recovery Diskette 3,** then press **F10**. **c** When prompted, remove **Recovery Diskette 3** and insert **Recovery Diskette 4**, then press **F10**. **d** Remove **Recovery Diskette 4.** **e** Press **F10** to reboot (restart) your system. **NOTE** When the system reboots, the disaster recovery software should initialize and the recovery tape should begin to load. The system may stop responding while displaying the message `Deinitializing System Support`. If this occurs, press the reset button to reboot the system. After the system reboots, the disaster recovery process will continue and the tape should begin to load.

Table 4-5   How to restore a system from a disaster using boot recovery diskettes and full backup tape (continued)

Task	Step
	f If your backup data spans multiple tapes, click **Yes** in the **Do you have any more tapes that you would like TapeWare to restore to your system?** window and insert additional backup tapes. Otherwise, click **No**.
	g Click **Restart** in the **Recovery Complete** window to restart your system.

Restoring a 3070 System from the System Recovery DVD

Introduction

This procedure describes how to install system recovery software on your Agilent 3070 system controller (MS Windows®[*] system only).

Restore from the System Recovery DVD only if:

- the operating system will not boot, **and**
- the main system disk drive fails, **and**
- the file structure is corrupted or lost, **and**
- the backup tape was never created or is corrupt.

Restoration takes about 10 minutes.

Required Materials

- The System Recovery DVD (E9970-19415) that was shipped with your system.

CAUTION

⚠ The System Recovery DVD is unique to each computer. The DVD case is labeled with the serial number of the computer for which it was created. Using the wrong DVD for recovery may result in a defective system.

CAUTION

⚠ Restoration from the System Recovery DVD will format the C: drive and reload it to a factory default state. You will not be able to boot the testhead because certain files which are unique to your system are not restored by this process.

Before doing this procedure, verify that you have a backup copy of these unique files:

- `\Agilent3070\diagnostics\th1\config`
- `\Agilent3070\diagnostics\th1\config.o`
- `\Agilent3070\lib\.enable`
- `\Winnt\System32\drivers\etc\bootptab.`

To restore these files after the recovery procedure, see *Administering Agilent 3070 Systems (MS Windows®)*. For restoring codewords, see *Installing Codewords on a 3070*. For help, consult your Agilent systems engineer.

After system restoration, you must also reconfigure the IO for the GPIB Card. Follow the System Recovery Procedure and IO Configuration Procedure on page 29.

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[*]   Window®s and MS Windows® are U.S. registered trademarks of Microsoft Corporation.

System Recovery Procedure

6 Load the System Recovery DVD in your DVD-ROM drive.

7 Restart the computer. If necessary, press the **reset** button on the front of the computer**.**

8 At the **Agilent 3070:** prompt, type `restore system.`

9 Press any key to scroll through the license agreement.

10 In the **Power Quest** screen, click **Continue**.

11 In the **Warning** message window, click **Yes**.

12 When the restoration is completed and you see the **Agilent 3070:** prompt, remove the DVD from the drive.

13 Press **CTRL**-**ALT**-**DEL** to restart the computer.

IO Configuration Procedure

1 Log in as `administrator`.

2 Right-click the blue **IO** icon on the right side of the Taskbar and select **Run IO Config**.

3 In the **Available Interface Types** field, select **82350 PCI GPIB** (older controllers) or **82357 USB to GPIB** (newer controllers) and click **Configure**.

4 In the **SICL Interface Name** field, ensure that **hpib7** is selected, and click **OK**.

5 In the **IO Config** window, click **OK**.

6 In the **Restart** message window, click **OK**.

7 Restart the computer: click **Start** > **Shutdown** > select **Restart** > click **OK**.

This concludes the recovery procedure. Now restore the unique files listed on page 28.

5

Administration Tasks

In this chapter...

Objectives

When you finish reading this chapter, you should be able to:

■ Mantain the file system

■ Add users and groups

■ Know the 3070 users and groups shipped with the system.

Prerequisites

Before you begin using this chapter, you should already:

■ Know how to administer an MS Windows® Workstation.

■ Know the MS Windows® Administrator login and password.

■ Have the 3070 hardware and software installed and configured.

Overview of Administration Tasks

This chapter describes system administration tasks as they relate to the 3070 applications. It does not describe general MS Windows® system administration. For information on any other MS Windows® administration tasks, refer to the MS Windows® documentation shipped with the system, both on line and hardcopy.

If you do not see a task listed in this section, you can assume that you do not need to have any 3070-specific information to perform the task.

Maintaining the File System

Required Tools and Materials

To accomplish the tasks in this section, you will need:

- Windows 2000 System Tools, such Disk Defragmenter and Disk Cleanup.

- Administrative Tools for other file management tasks.

File System Maintenance Tasks

The 3070 system uses the NTFS file system. NTFS is a 32-bit file system that supports security features and has the capability to address very large files.

Tasks you may need to perform regularly to maintain the file system are:

- Check the disk for errors. Use Check Disk to fix file system errors and scan for and recover bad sectors.

  To run Check Disk:

  - From the Desktop, double-click My Computer. Right-click the local disk you want to check and click **Properties**.

  - Select the Tools tab. Click **Check Now** from the **Error checking** box.

- Periodically remove files from the following directories:

  - `C:\temp`
  - `D:\temp`

- Use Disk Cleanup to delete temporary files, Internet cache files, and unnecessary program files.

  To run Disk Cleanup:

  - From the Start menu, point to **Programs > Accessories > System Tools > Disk Cleanup**.

- Defragment the hard disk. Use Disk Defragmenter to ensure efficient file storage on your hard drive.

  To run Disk Defragmenter:

  - From the Start menu, point to **Programs > Accessories > System Tools > Disk Defragmenter**.

- Use an antivirus program to detect and eliminate viruses.

Help

Windows 2000 provides extensive online help. To use Help:

- Choose **Help** from the Start menu, or

- Press **F1.**

Creating User Accounts

Authorized users gain access to an 3070 system by supplying a valid user name (login name) and (optionally) a password.

File access permissions and group permissions determine who can access a given file on MS Windows® systems.

Required Tools and Materials

To accomplish the tasks in this chapter, you will need:

■ Standard MS Windows® administration tools.

■ Standard 3070 Group and User Accounts

Groups

Groups are useful because files have permissions at the group level. If your users all belong to the same group, you can have several users, but still share restricted files. Always use one of the predefined 3070 groups when adding new users. You should not need additional groups to use the 3070 functionality. As shipped, your 3070 system is set up with the 3070 groups shown in **Table 5-1**.

Table 5-1   3070 group accounts

Group Name	Definition and Permissions
Agilent3070Operators	The members of this group have access restricted to using BT-Basic. All 3070 operator accounts should be members of this group.
Agilent3070Users	The members of this group have the same privileges as any other user account on the system.

Users

Users accounts are useful if you or your users need to know who creates and owns particular files. Also, you can restrict the environment of a particular user. As shipped, your 3070 system is set up with the 3070 users shown in **Table 5-2**.

Table 5-2 3070 users

User Name	Definition and Permissions
operator oil	The operator account, member of the `Agilent3070Operators` group. This user can run BT-BASIC in operator mode, or you can create a localizable operator interface (`oil`). See the 3070 Online Help System for more information.
user	A generic user account, member of the `Agilent3070Users` group.
service3070	Member of the `Agilent3070Users` group. Use this account to run DGN and troubleshoot the testhead.
calibrate	Member of the `Agilent3070Users` group. Use this account to calibrate the testhead.
std3070	This account is used only by Agilent. It is a member of the `Administrator` group, which is a standard NT group.

About User Accounts

Windows 2000 requires a valid user account to log on to a local computer system. A user account consists of a unique user name and password. The first time you start your computer, you must establish a user account using the Setup Wizard. User accounts can be added as needed.

On a client-server network, there are two types of user accounts: domain accounts and local accounts.

■ Domain accounts provide access to the network and its resources, based on defined user permissions.

■ Local accounts are valid only on a local computer system.

Group Accounts

Group accounts can be used to assign user rights and permissions to many users. You can create groups and assign users to one or more groups. Members of a group have all rights and permissions assigned to the group.

User Rights

User rights define the actions a user can perform on a computer. Rights can be assigned to both users and groups. By carefully planning and assigning user and group rights, you can provide secure access to files.

Adding a User Account

Win 2000 System

1 Login as `Administrator`.

2 Click **Start** > **Settings** > **Control Panel** > **Administrative Tools** > **Computer Management.**

3 In the left pane, double-click **Local Users and Groups** and click **Users**.

4 In the right pane, right-click and select **New User...**

5 Enter the **User name:**, **Full name:**, **Description:**, **Password:** and **Confirm Password:** of the <new user> and click **Create.**

6 Close the New User window.

7 In the Computer Management window, right-click the <new user> created in **step 5** and select **Properties**.

8 Click the **Profile** tab. Verify that **Local Path** is selected. In the **Local path:** field, enter: `<drive>:\Agilent3070\home\<new user>` and click **OK**.

9 If you are on a testhead controller, click the **Member Of** tab and click **Add**. Select **Agilent3070Users** and click **Add** > **OK**. If you are on a test development workstation, this step is not applicable.

10 Close the Computer Management and Administrative Tools windows.

11 Determine your **home** folder:

a Click **Start** > **Settings** > **Control Panel** > **System** > **Advanced** > **Environment Variables...**

b Note the value of the variable `HOME` and close the Environment Variables, System Properties, and Control Panel windows.

12 Open Explore, navigate to the **home** folder, and copy the following files ...

- `.hp3070`
- `.motifbind`
- `ex.rc`
- `profile.ksh`

... to the <new user> folder created in **step 5**.

13 Close Explore.

Win NT System

Only test development workstations are supported on Windows NT systems; testhead controllers are not supported.

1 Login as `Administrator`.

2 Click **Start** > **Programs** > **Administrative Tools (Common)** > **User Manager** > **User** > **New User**.

3 Enter the **Username:**, **Full Name:**, **Description:**, **Password:**, and **Confirm Password:** of the <new user> and click **OK**.

4 In the User Manager window, click **<new user>** > **User** > **Properties** > **Profile**.

5 Verify that **Local Path** is selected, and in the **Local path:** field, enter:

`<drive>:\Agilent3070\home\<new user>`. Click **OK**.

6 Close the User Manager windows.

7 Determine your **home** folder:

a Click **Start** > **Settings** > **Control Panel** > **System** > **Environment.**

b Note the value of the variable `HOME` and close the System Properties dialog box.

8 Open Explore, navigate to the **home** folder, and copy the following files ...

- `.hp3070`
- `.motifbind`
- `ex.rc`
- `profile.ksh`

... to the <new user> folder created in **step 3**.

9 Close Explore.

Adding a Group Account

To add a group account, login as `Administrator` and:

1 Click **Start** > **Settings** > **Control Panel** > **Administrative Tools** > **Computer Management.**

2 Double-click **Local Users and Groups** under System Tools.

3 Right-click **Groups** and select **New Group**.

4 Type a **Group name** and **Description.**

5 Click **Add** to open the **Select Users or Groups** dialog box.

6 Select the local computer from the **Look in** list box.

7 Choose a name or group to add, and click **Add** for each user that you want to add to the group.

8 Click **OK**, and then click **Create.**

9 Click **Close**.

When you add a new 3070 user, keep in mind the following 3070-specific items:

- When selecting the group the user belongs to, use one of the following predefined 3070 groups:
  - `Agilent3070Operators`
  - `Agilent3070Users`

Make sure the user belongs to one or more of these groups to ensure proper access and security to 3070 features, applications, and files.

- We recommend all users have a password for added system security.

- The $AGILENT3070_ROOT system variable is set in system properties, so you do not need to set it for each user account.

Using the 3070 User Accounts Across a Domain

If you are logging into the 3070 using a domain user account, there are no differences EXCEPT if you are logging in as the `operator`. Before anyone can use the `operator` account across a domain successfully, you must copy the operator policy file to the Primary Domain Controller (PDC). To do so:

1 Copy the operator's policy file to the Primary Domain Controller (PDC), which is the computer that authenticates user logins:

Copy:

```
%AGILENT3070_ROOT%\etc\OperatorProfile\Policy
\oper.pol
```

(on the 3070 Controller)

to:

```
%SystemRoot%\System32\Repl\Import\Scripts\ope
r.pol
```

(on the PDC)

The new directory location is also known as the Netlogon share directory.

2 Merge the `oper.pol` file into `Ntconfig.pol`.

3 Use regedit to modify the registry of the 3070 controller as follows:

change the `HKEY_LOCAL_MACHINE\SYSTEM\`
`    CurrentControlSet\Control\Update\`
`    UpdateMode DWORD`
value from a hex 2 to a hex 1

remove
`HKEY_LOCAL_MACHINE\SYSTEM\`
`    CurrentControlSet\Control\Update\Networ`
`kPath` string value

4 Transfer the operator account from the 3070 controller to the PDC:

   a View the Agilent3070Operators group information on the 3070.

   b Replicate this group account on the PDC.

   c View the operator user account information on the 3070.

   d Replicate this user account on the PDC.

   e Remove the operator user account information from the 3070.

5 Optional: Enable replication on all domain controllers so that the `Ntconfig.pol` file is replicated to the same directory on all backup domain controllers.

Administering Datalogging

This section describes several datalogging tasks. Datalogging is described in *Information Management*, Chapter 2; see "Structure of the Datalogging Files."

Occasionally, the datalogging process may require your attention. If a 3070 system fails to log data, do the following:

■ Verify that the `translogd` process, which automatically transfers log data from source queues to destination queues, is running. To do this, use the Processes tab in the Windows Task Manager. If datalogging files are present in the source queues, `translogd` transfers them to the destination queues for processing by quality management software.

■ Verify that the `tld.conf` configuration file used by `translogd` is present and is not corrupt.

Locate the file in the directory: `$AGILENT3070_ROOT/qm/logdata/`

Unless you have modified this file, it should be exactly like the original in the directory `$AGILENT3070_ROOT/standard`.

■ Use an ASCII editor, such as Notepad or Wordpad to examine the `translogd` error file to see if any error messages were logged there. The error file is: `$AGILENT3070_ROOT/qm/logdata/tld.log`

After you have corrected a datalogging problem, you can delete the error messages, but do not delete the file.

CAUTION

⚠ You must **never** delete the `tld.log` error file.

■ A repetitive error will cause the `$AGILENT3070_ROOT/qm/logdata/tld.log` error file to grow without bounds. If the size of the file exceeds 2.5 Megabytes, the following message will be printed on a DOS window which will pop up:

■ WARNING -- TRANSLOGD IS EXPERIENCING ERRORS. LOG FILE IS '*<path>*'

■ LOG FILE SIZE TOO LARGE (LIMIT=*<number>* SIZE=*<number>*)

■ PLEASE EXAMINE (THEN TRUNCATE) THIS FILE!

■ You may need to clear out the directories where datalogging information is stored (the board subdirectories beneath the `testerq` directory or the log data files beneath the `pbqmq` directory). Under normal circumstances, these files are removed automatically once they have been processed.

Installing Patches

If you receive notification of a patch release for 3070 software, you will also receive instructions on how to download and install the patch.

When you install the patch software, it will find the current software, verify that all patch prerequisites are met, and load the patch. This will typically happen with no interaction required.

> **CAUTION**
>
> ⚠ Do not install any Microsoft® Service Pack unless specifically recommended by Agilent.

6

Understanding the File System

3070 Reference

3070 User and Service manuals are located on 3070 system controllers and on factory-supplied updates.

The Root Directory Environment Variable

This section contains:

Introduction

3070 systems are now available with a choice of these two operating systems:

- HP-UX

- MS Windows®

3070 application file path usage is different between the two operating systems.

The $AGILENT3070_ROOT Environment Variable

Beginning with software revision 3070 04.00pb 0501 WN, an environment variable is used to allow 3070 board files to be easily transferred between 3070 systems running either MS Windows or UNIX.

The environment variable is **$AGILENT3070_ROOT**. It replaces the root directory path (upper path names) on both operating systems.

All subdirectories under `/opt/hp3070/../..` will exist on UNIX systems for the forseeable future.

> **NOTE**
>
> `/opt/hp3070` is replaced by **$AGILENT3070_ROOT** on all MS Windows systems.

$AGILENT3070_ROOT on UNIX

On UNIX systems, the value of **$AGILENT3070_ROOT** is `/var/hp3070`

Identify the Value of $AGILENT3070_ROOT

To identify the value of **$AGILENT3070_ROOT** on a UNIX or Windows system, at a shell window prompt enter:

- `echo $AGILENT3070_ROOT`

New File Path Usage in a UNIX terminal Window

Table 6-1 illustrates new path equivalents using the system config file when working in a UNIX terminal window.

Table 6-1   New file path usage in a UNIX shell window

Before Software Release 3070 04.00 pa	At and After Software Release 3070 04.00 pa
`/var/hp3070/diagnostics/th1/config`	`$AGILENT3070_ROOT/diagnostics/th1/config`
`/hp3070/diagnostics/th1/config`	`$AGILENT3070_ROOT/diagnostics/th1/config`

File Path Usage in BT-BASIC Window

Table 6-2 illustrates new path equivalents using the system config file when working in a **BT-BASIC** window.

> **NOTE**
>
> BT-BASIC usage is the same in both UNIX and MS Windows.

Table 6-2 File path usage in a BT-BASIC window

Pre 3070 Software Release 3070 04.00pa	3070 Software Release 3070 05.00p	At and After 3070 Software Release 3070 04.00pa
msi "D:/Agilent3070/diagnostics/th1"	msi "C:/Agilent3070/diagnostics /th1"	msi btgetenv$ ("AGILENT3070_ROOT") & "/diagnostics/th1"
get "D:/Agilent3070/diagnostics/th1/ config"	get "C:/Agilent3070/diagnostics /th1/config"	get btgetenv$ ("AGILENT3070_ROOT") & "/diagnostics/th1/config"

NOTE

The btgetenv$ ("AGILENT3070_ROOT") & is only required for BT-BASIC commands which are referenced to the root.

If the text does a BT-BASIC msi btgetenv$ ("AGILENT3070_ROOT") & <command> prior to the next BT-BASIC command (for example compile or faon), then using the environment variable which defines the path from the root is unnecessary. BT-BASIC commands which normally contain paths (msi, load, copy, save, get, store, unlink, rcall) for example, will require btgetenv$ ("AGILENT3070_ROOT") & <rest of path>

$AGILENT3070_ROOT on MS Windows

On MS Windows systems, the factory default value of **$AGILENT3070_ROOT** is `C:/Agilent3070`

Identify the Value of $AGILENT3070_ROOT

To identify the value of **$AGILENT3070_ROOT** on a MS Windows system,

at a shell window prompt enter:

- `echo $AGILENT3070_ROOT`

File Path Usage in a MS Windows Korn Shell Window

When working in a **Korn shell** window, follow the UNIX syntax by:

- Using `$variable` (instead of `%variable%`).

- Using the correct case.

- Using `/` (forward slash) instead of `\` (backslash)

Table 6-3 illustrates new path equivalents when working in a MS Windows **Korn shell** window.

Table 6-3   New file path usage in a MS Windows **Korn shell** window

Pre 3070 Software Release 3070 04.00pa	3070 Software Release 3070 05.00p	At and After 3070 Software Release 3070 04.00pb 0501 WN
`D:/Agilent3070/diagnostics/th1`	`C:/Agilent3070/diagnostics/th1`	`$AGILENT3070_ROOT/diagnostics/th1`

New File Path Usage in a MS-DOS Command Prompt Window

When working in a **Command Prompt** window:

■ Use `%variable%` (instead of `$variable`).

■ Use `\` (backslash) instead of `/` (forward slash).

Table 6-4 on page 6-6 illustrates new path equivalents using the `dev` directory when working in a **Command Prompt** window.

Table 6-4   New file path usage in a **MS-DOS Command Prompt** window

Pre 3070 Software Release 3070 04.00pa	At and After 3070 Software Release3070 04.00pb 0501 WN
`D:\Agilent3070\dev`	`%AGILENT3070_ROOT%\dev`

NOTE

In MS Windows® 2000 Professional, the **MS-DOS** window is now the **Command Prompt** window. To open the **Command Prompt**: point to **Start**, then **Programs**, then **Accessories,** and choose **Command Prompt.**

The `.hp3070` File

The system first searches the current working directory for a `.hp3070` file. If one is not found, the user's home directory is searched. This method allows a `.hp3070` file for each board.

The `.hp3070` file can affect system behavior in many ways.

Some Descriptions of `.hp3070` File Keywords

Some descriptions of `.hp3070` file keywords are given in **Table 6-5**. This is not a complete description of this file. Other options are described beneath appropriate topics throughout the 3070 User documentation.

Table 6-5   Some descriptions of `.hp3070` file keywords

keyword	Description
`.BackupLevel`	The value of this option sets the global backup style for this user and determines whether the system compilers keep an unchanged copy (a backup) of files before modifying them, and how the backup is stored. The backup style can be:
	none – No file backup is made.
	numbered – Multiple backups are made as files change. To identify a numbered backup file, its name has a period, a tilde (~), and a unique number from 1 to 9 appended to its name; for example, `file.1~`. Number 1 is the most recent backup, and number 9 is the oldest. When more than 9 backups occur, the oldest backup file in the set is discarded and those remaining are renumbered.
	unnumbered – A single backup is made as files change. Each new backup file overwrites the contents of the previous backup file. To identify an unnumbered backup file, a tilde (~) is appended to its name; for example, `file~`. For example, `.BackupLevel: unnumbered`
	Besides the global value for backup style, you can individually specify a backup style for some of the software modules in your system. For example, `Mpa.BackupLevel: numbered`
	overrides the global default and sets the backup style for the pin assignment software to **numbered**.

Table 6-5   Some descriptions of `.hp3070` file keywords (continued)

keyword	Description
`.ProgramAction`	The value of this option determines whether a new window is automatically opened when some commands are executed (such as `execute` – see **Syntax Reference**. `.ProgramAction` can be either `window` (a new window is automatically opened) or `nowindow` (a new window is not automatically opened). For example, `.ProgramAction: nowindow`
`Debug.Source`	The value of this option determines whether the Agilent Pushbutton Debug environment is automatically invoked when a `debug` statement is executed on the BT-BASIC command line. The value of this option can be: **Debug.Source: no** – Use the standard debug environment by default. **Debug.Source: yes** – Use the Agilent Pushbutton Debug environment by default. For more information, see **Test Methods: Digital**.
`FXT.WIRECOLORS`	This option lets you specify user-defined wire colors for fixturing. The values following this variable are the colors that are requested in fixture building reports. This lets you customize wiring reports so they ask for colors (in any language) matching the colors of the wires being used. The first color is used for all non-ground wiring (positive and negative) and should be the local word for red. The second color is used for all ground wiring and should be the local word for black. The remaining colors are used in sequence, one per node. The sequence of colors repeat after the last color has been used. For example, `FXT.WIRECOLORS: "red black blue green yellow aqua white"` In the example, `red` is used for all non-ground wires, and `black` is used for all ground wires. The color of wires specified for wiring nodes cycle through the list from `blue` to `white`. After `white` has been used, the sequence starts over with `blue`. For more information, see **Test and Fixture Development**.
`Operator.ForceWidgets`	This option lets you specify whether the operator keypad appears on the screen for operator logins. Specify `Yes` to have the keypad automatically appear, or `No` to have it not appear. For example, `Operator.ForceWidgets: Yes`

Table 6-5   Some descriptions of `.hp3070` file keywords (continued)

keyword	Description
`Operator.Footswitch`	This option lets you specify whether the foot switch on the Agilent 3070 is enabled. Specify `Yes` to have the foot switch enabled, or `No` to have it disabled. For example, `Operator.footswitch: Yes`

The majority of the `.hp3070` file contains definitions for the operator keypad, which are invoked by an `operator` statement if the `Operator.ForceWidgets` option is set to `Yes` (see **Syntax Reference**). When a set of labels is specified in the `operator` statement — for example, `operator waitforstart` invokes the set of labels and functions defined as `waitforstart` — that set of label definitions becomes active. The boxes in the operator keypad are labeled with those definitions, and selecting a box (with the mouse or the touchscreen) invokes the function associated with the label in that box.

If no label specifier is included in an `operator` statement, the default label definition is determined by the value of either of two variables in this file. The `Operator.Default` variable sets the default for a user who is not using a board handler with the system, and the `Operator.ABH_Default` variable sets the default for a user who is. The values of both of these variables are typically defined as `standard`.

The label and function definitions are arranged into groups that each contain three specifications:

■ A physical description of the operator keypad, including the X and Y coordinates and how many boxes should appear in the keypad.
■ What label (text) should appear in each box. Labels can contain any combination of upper or lowercase letters and are treated as lowercase when invoked in an `operator` statement.
■ Which function is invoked by selecting a particular box. Function names are case-sensitive.

For example, `standard`, which is the default definition for the operator keypad, might look like the following:

```
Standard.Boxes:      8
Standard.X:          10
Standard.Y:          4
Standard.Columns:    8

Standard.Label1:     start
Standard.Label2:     yes
Standard.Label3:     no
Standard.Label4:     .
Standard.Label5:     faon
Standard.Label6:     faoff
```

```
Standard.Label7:     stop
Standard.Label8:     exit

Standard.Command1:        CHAR_START
Standard.Command2:        CHAR_YES
Standard.Command3:        CHAR_NO
Standard.Command4:        CHAR_NULL
Standard.Command5:        CHAR_FAON
Standard.Command6:        CHAR_FAOFF
Standard.Command7:        CHAR_STOP
Standard.Command8:        CHAR_EXIT
```

This example defines the keypad boxes which are
arranged in eight columns. When the operator keypad is
invoked by an `operator` statement that specifies this
definition, the boxes are labeled `start`, `stop`, `yes`, `no`,
`faonn`, `faoff`, and `exit`. When box #1 (`Label1` or
`start`) is selected, the characters `START` are executed on
the command line; `start` is the function passed to
BT-BASIC.

Installing Software Packages

Introduction

The factory routinely releases new software packages that improve and add capabilities.

Some software packages depend on a previous software package being installed.

Always notify system users when a new software package is installed.

Install a Software Package

Installation instructions accompany software packages. Follow the instructions carefully.

7 Additional Information for Networking

In this Chapter...

Introduction

A network is a collection of computers that communicate with each other using a set of agreed upon protocols.

3070 Networking Facilities

3070s contain networking software for:

- LANs (local area networks).
- Internet services.
- File sharing.

Additional facilities include software to enable:

- remote log ons.
- file transfers.
- remote execution.
- network printer servers.
- a full range of Internet services.

To Configure Networking

The first time a 3070 is booted, system configuration information will need to entered. This includes networking information. See Chapter 3, **Setting Up and Configuring New Systems** for the procedure.

Testhead IP Addresses

This section contains:

- **3070 System IP Addresses**, **7-3**
- **Implications for Custom Applications**, **7-3**

All 3070 MS Windows systems are configured with Agilent IP addresses in the 10.3.112.XX series.

To avoid network conflicts, including the inability to boot a testhead, all 3070 systems on the same network must share the same IP address series.

3070 System IP Addresses

The following Agilent board test systems have IP addresses in the 10.3.112.XX series:

- 3070 MS Windows systems.
- 3070 UNIX systems shipped with B.03.80 software.
- 3070 UNIX systems updated or ignited with B.03.80 software.

Because of the Hewlett-Packard / Agilent Technologies split, 3070 Board Test systems are no longer shipped with LAN IP addresses in the 15.3.112.XX series.

This should not cause any networking problems because the systems are configured to use local hosts for testhead IP address resolution.

Using a Nameserver for Existing Systems

If you are using a nameserver for name resolution, we recommend, but do not require, that all IP addresses match. This means they should all use the 10.3.112.XX IP address convention.

> **NOTE**
>
> Only 3070 IP addresses in the 10.3.112.XX format are supported by Agilent.

Implications for Custom Applications

If there are any custom applications that are hard-coded to look for a 15.3.112.XX address, they must be modified to look for a 10.3.112.XX address.

> **NOTE**
>
> If you have existing devices on your public LAN using addresses in the 10.3.112.XX range or if you experience conflicts, contact your Agilent support representative.
>
> Find your Agilent support representative on the Internet at `http://www.agilent.com`

a Click **Contact Us** at the top of the page.

b Click **Test & Measurement**

    c Select your country and click **go**

    d Scroll down to **Technical & Professional Services**

The Private LAN

This section contains:

3070 Private LAN IP Addresses

Your 3070 MS Windows system includes two network adapter cards for connecting to local area networks. (LANs). The first network adapter card is configured and reserved for the private LAN. It is represented as **Local Area Connection** in Network and Dial-up Connections. **Local Area Connection** communicates directly from the controller to the testhead. Do not change these settings. There should not be other devices attached to this LAN other than shown in **Figure 7-1** on page 7-6.

The private LAN IP addresses are standard for every test system. **Table 7-1** shows the IP addresses reserved for the 3070 private LAN.

Table 7-1 3070 Private LAN IP Addresses

IP Address	Address Reserved for:
10.3.112.10	The 3070 MS Windows controller. (Local Area Network)
10.3.112.2	The testhead system card.
10.3.112.4	Module 0 of the ControlXT card.
10.3.112.5	Module 1 of the ControlXT card.
10.3.112.6	Module 2 of the ControlXT card.
10.3.112.7	Module 3 of the ControlXT card

Figure 7-1   3070 Private LAN IP Addresses
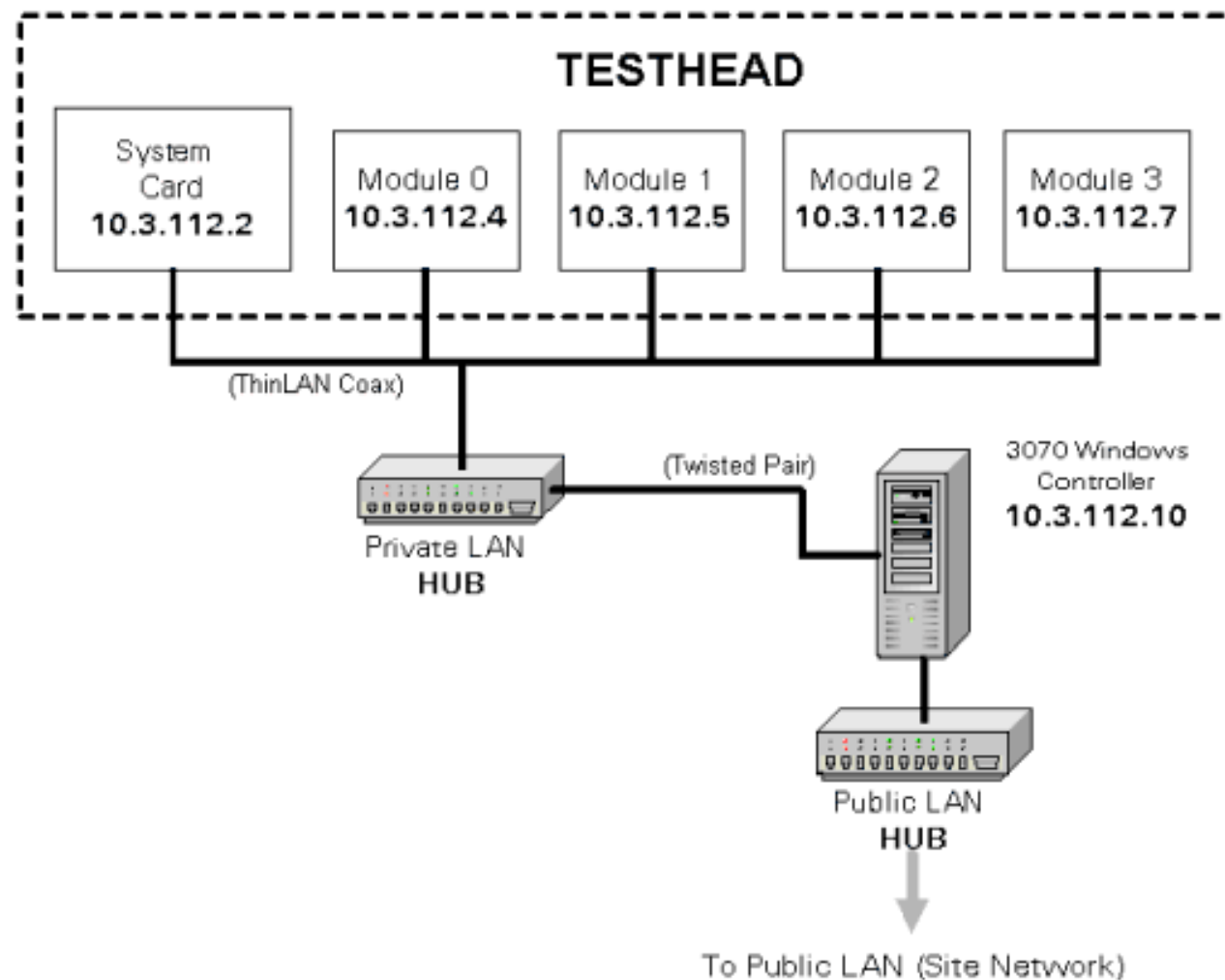
The Public LAN

This section contains:

- **Introduction**, 7-7
- **A User-Access Example**, 7-7

Introduction

Local Area Connection 2 is the public LAN interface used for connecting to your site network. This LAN interface can be connected to your network with an RJ45 cable that is compatible with 10Base-T or 100Base-T.

A 3070 MS Windows system includes an RJ45 LAN cable located at the base of the controller. **Figure 7-2** shows the location of the LAN cable and coupler on the back of a 3070 MS Windows controller. Use this cable to connect to your site network.

A User-Access Example

3070 systems are now available with either a Windows or a UNIX controller. **Figure 7-3** on page 7-8 shows an example of a user-access scheme when both Windows and UNIX systems exist.

Figure 7-2   LAN cable and coupler
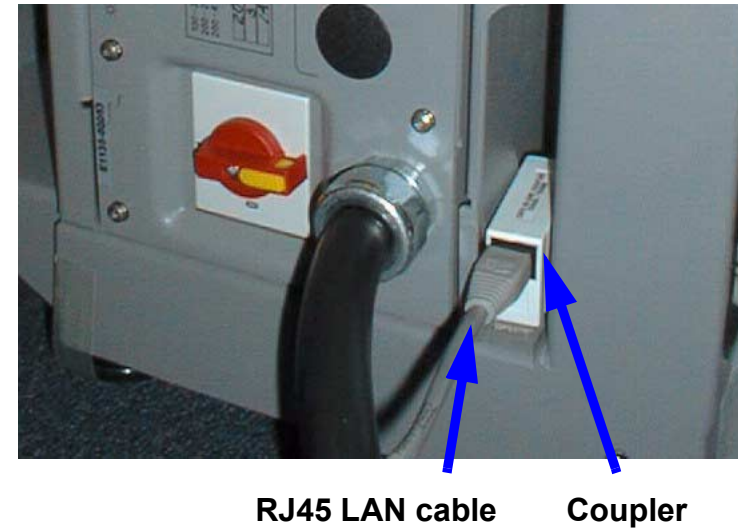
RJ45 LAN cable   **Coupler**

Figure 7-3   User-access example for UNIX and MS Windows test development systems and testheads
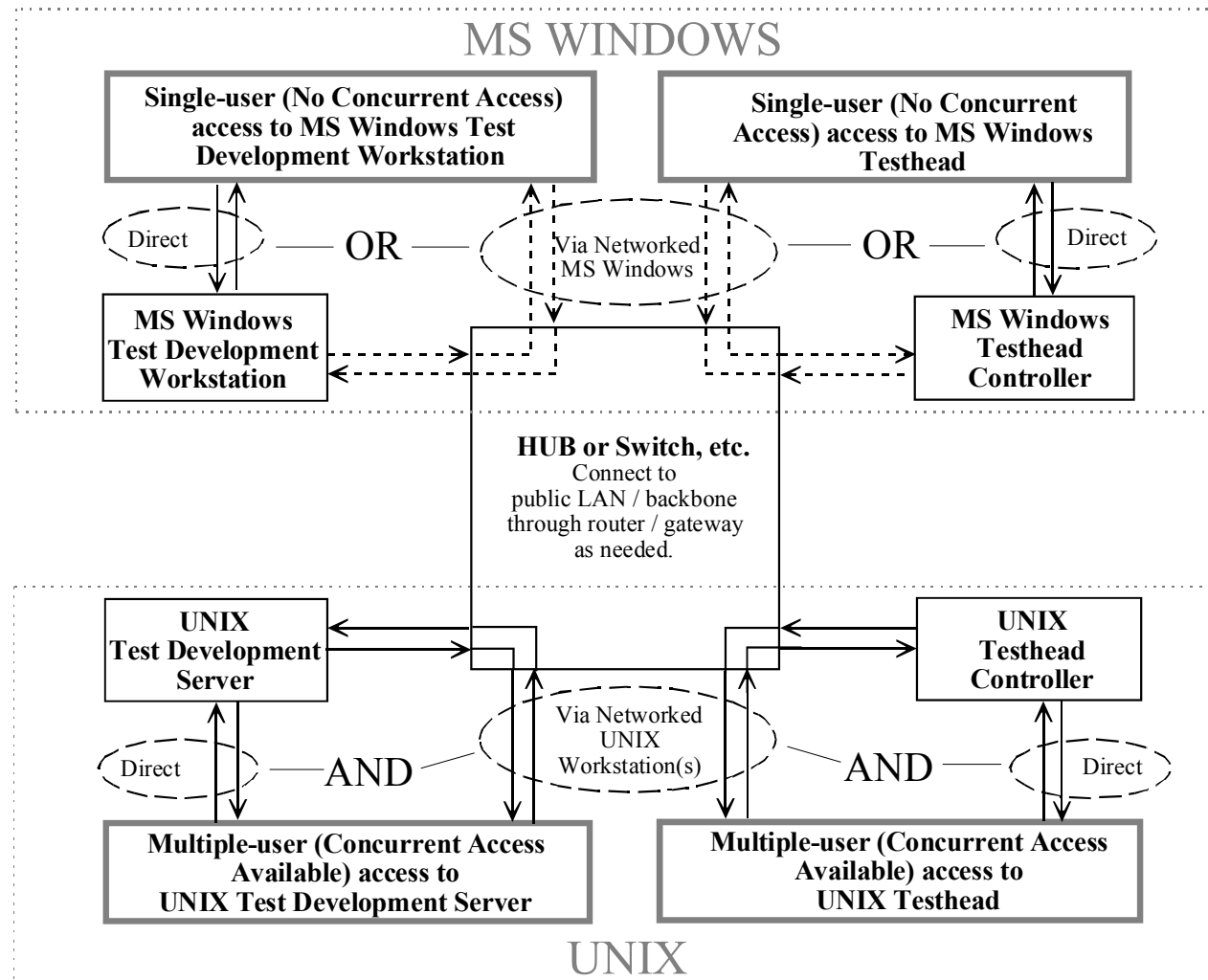
Bridges, Routers, and Gateways

Bridges, routers, and gateways are used to connect multiple segments of a network into a unified, larger network.

Typically, you will not have to worry about these devices. If installing systems onto an existing network, you may have to configure the 3070 to take advantage of the facilities that your network provides.

Clients and Servers

Network

A network is a group of computers that are connected and used for sharing resources such as files, software, and peripheral devices.

Hosts and Nodes

Each computer or device on the network is host (also known as a node). A host can be a client, server, or both. In most cases, each host functions as both a client and a server.

Client

A client is a computer or program that requests the services of another computer or program.

Server

A server is a centralized computer that manages requests and controls access to shared network resources.

Client/Server

In a Client/Server network, a central computer, the server, manages access to shared network resources. The computers that connect to the server and request services are called clients and are considered to be part of the domain.

The MS Windows Controller as Server

The terms **client** and **server** relate to communication from the computer's point of view. An example of this is the use of a personal computer (MS Windows) as an X-Terminal to communicate with an 3070 controller.

From the user's point of view, the 3070 is the server and the MS Windows controller is the client. But from a networking point of view, the MS Windows controller is the server because it is running a program called X-Server. The 3070 requests services from the MS Windows controller, such as displaying a window or drawing board graphics. The MS Windows controller does not request services from the 3070.

Domain Names

A domain name is a unique combination of a hostname and a network domain name. A hostname is a unique name assigned to node within the network domain to which the node is connected. It is not valid to have two nodes with the same name in the same domain.

TCP/IP protocols provide a number of mechanisms for mapping domain names to IP addresses.

Network Services

A 3070 MS Windows system comes bundled with a variety of basic and advanced network services.

These services may require configuration.

The primary network services available on the 3070 are described in **Table 7-2**.

Table 7-2   Network services

Network Service	Description
FTP	Transfer files to and from a computer running an FTP server service.
	To start FTP:
	a From the Start menu, click **Run**
	b Type **ftp**, then click **OK**.
Telnet	Connect or login to a remote server or computer over a network. To use Telnet, you need:
	• the TCP/IP protocol installed and configured on your computer.
	• a user account on the remote host
	To start Telnet:
	a From the Start menu, click **Run**
	b Type **telnet**, then click **OK**.
Internet Explorer	Connect to the internet, search for and view information on the World Wide Web.
	Use the Internet Connection Wizard to configure settings.
Outlook Express	Send and receive e-mail messages.

Useful Commands

The commands in **Table 7-3** can be executed in a Command Prompt window. In Windows 2000, the Command Prompt replaces the MS-DOS prompt.

More detailed information on these and others commands is available in Windows 2000 Professional Help.

To Execute a Command in a Command Prompt Window

1 Point to Start > Programs > Accessories and click **Command Prompt.**

2 Type the command at the C:\> prompt.

Table 7-3   Command Reference

Command	Description
arp	Display or modify IP-to-ethernet physical address translation tables.
finger	Display information about a user on a specified system.
ftp	Transfer files to and from a computer running an FTP service.
hostname	Display the hostname of the computer.
ipconfig	Display TCP/IP network configuration information.
nbstat	Display protocol statistics and TCP/IP connections using NetBIOS.
netstat	Display protocol statistics and TCP/IP connections.
nslookup	Display information about DNS servers.
ping	Verify connections to remote computers.
route	Maintain network routing tables.
rsh	Run commands on remote computers running the RSH service.

8

Reference

In this Chapter...

Referenced Manuals

The following manuals are referenced within this chapter:

■ *Administering Agilent 3070 MS Windows Systems* E9970-90000.

■ *Agilent 3070 / 79000 Family Site Preparation Manual* 03066-90114.

■ *Agilent 3070 / 79000 Repair I Manual* E4000-90160.

■ *Agilent 3070 Family Users' Manual*.

Introduction

The information in this chapter may be helpful when installing an Agilent 3070 system that uses a MS Windows controller.

Logging-On as service3070

The `service3070` logon allows system configuration and testing.

Display the Logon Status from a Current Login

1 Press the **<Ctrl><Alt><Delete>** keyboard keys at the same time.

2 If logged-on as `service3070`, click **Cancel**. Otherwise, click **Logoff...**.

Logon as `service3070`

1 Click **Start** > **Shut Down...**.

2 Select **Close all programs and log on as a different user?**

3 Enter the logon information:

■ **Logon Name =** `service3070`

■ **Default Password =** `service`

The Root Directory Environment Variable

This section contains:

Introduction

3070 systems now establish a root directory environment variable.

Beginning with software revision 3070 04.00pa, an environment variable is used to allow 3070 board files to be easily transferred between 3070 systems running either MS Windows or UNIX.

The environment variable is named **$AGILENT3070_ROOT**. It replaces the root directory path (upper path names) on both operating systems.

The directories, `/var/hp3070` and `/opt/hp3070,` are replaced by **$AGILENT3070_ROOT** on all MS Windows systems.

The root directory environment variable is usually set to `D:\Agilent3070` , but could change.

Determine the Value of the Root Directory Environment Variable

1 Open a Korn shell window:

- Double-click the desktop **Korn Shell** icon OR

- Click **Start** > **Programs** > **Agilent 3070** > **Korn Shell**.

2 At the prompt, enter:

`echo $AGILENT3070_ROOT`

The string returned is usually:

`D:\Agilent3070`

Use of the Root Directory Environment Variable in a BT-BASIC Window

Table 8-1 illustrates new path equivalents using the system config file in a **BT-BASIC** window.

> **NOTE**
>
> BT-BASIC usage is the same in both UNIX and MS Windows.

Table 8-1 New file path usage in a BT-BASIC window

Pre 3070 Software Release 3070 04.00pa	3070 Software Release 3070 05.00p	At and After 3070 Software Release 3070 04.00pa
`msi "D:/Agilent3070/diagnostics/th1 /config"`	`msi "C:/Agilent3070/diagnostics/th1 /config"`	`msi btgetenv$ ("AGILENT3070_ROOT") & "/diagnostics/th1/config"`
`get "D:/Agilent3070/diagnostics/th1 /config"`	`get "C:/Agilent3070/diagnostics/th1 /config"`	`get btgetenv$ ("AGILENT3070_ROOT") & "/diagnostics/th1/config"`

> **NOTE**
>
> The `btgetenv$ ("AGILENT3070_ROOT") &` is only required for BT-BASIC commands which are referenced to the root.
>
> If the BT-BASIC `msi btgetenv$ ("AGILENT3070_ROOT") &` `<command>` is typed prior to the next BT-BASIC command (for example `compile` or `faon`), then using the environment variable which defines the path from the root is unnecessary. BT-BASIC commands which normally contain paths (`msi`, `load`, `copy`, `save`, `get`, `store`, `unlink`, `rcall`) for example, will require:
> `btgetenv$ ("AGILENT3070_ROOT") &` `<rest of path>`

Use of the Root Directory Environment Variable in a Korn Shell Window

In a **Korn shell** window, follow the UNIX syntax:

- Use `$<variable>` (instead of `%<variable>%`).

- Use the correct case.

- Use `/` (forward slash) instead of `\` (backslash).

Table 8-2 illustrates new path usage when working in a **Korn shell** window.

Table 8-2   New file path usage in a **Korn shell** window

Pre 3070 Software Release 3070 04.00pa	At and After 3070 Software Release 3070 04.00pa
`D:\Agilent3070\diagnostics\th1`	`$AGILENT3070_ROOT\diagnostics\th1`
`\opt\hp3070\help\C\SERVICE`	`$AGILENT3070_ROOT\Documentation\SERVICE`

Use of the Root Directory Environment Variable in a MS-DOS Command Prompt Window

In a **MS-DOS Command Prompt** window:

- Use `%<variable>%` (instead of `$<variable>`).

- Use `\` (backslash) instead of `/` (forward slash).

Table 8-3 on page 8-5 illustrates new path usage using the `dev` directory as an example when working in a **MS-DOS Command Prompt** window.

Table 8-3   New file path usage in a **MS-DOS Command Prompt** window

Before Software Release 3070 04.00pa	At and After Software Release 3070 04.00pa
`D:\Agilent3070\dev`	`%AGILENT3070_ROOT%\dev`

Directory Descriptions

Table 8-4 lists descriptions of some 3070 MS Windows
system directories.

Table 8-4   Descriptions of various 3070 MS Windows system directories

`$AGILENT3070_ROOT\`	The directory beneath which the vast majority of the 3070 system software resides.
`$AGILENT3070_ROOT\autofile`	The directory that contains all the autofiles for the system.
`$AGILENT3070_ROOT\bin`	The directory that contains most of the executable programs for the 3070 system.
`$AGILENT3070_ROOT\boards`	The directory that should contain customer board directories.
`$AGILENT3070_ROOT\contrib`	The directory where user-contributed software that may be of use to 3070 customers is redistributed by Agilent.
`$AGILENT3070_ROOT\dev`	A directory that contains pseudo device files for use by the 3070 software.
`$AGILENT3070_ROOT\diagnostics`	A directory that contains testhead configuration and diagnostic information / programs.
`$AGILENT3070_ROOT\etc`	A directory that contains miscellaneous files.
`$AGILENT3070_ROOT\help`	A directory that contains help information.
`$AGILENT3070_ROOT\home`	The directory that contains the MS Windows user's home directories.
`$AGILENT3070_ROOT\lib`	The directory that contains digital libraries and other executables.
`$AGILENT3070_ROOT\library`	The directory that contains device libraries provided by Agilent for board development.
`$AGILENT3070_ROOT\qm`	The directory to which statistics are logged.
`$AGILENT3070_ROOT\standard`	A directory that contains templates used throughout the system.

Table 8-4   Descriptions of various 3070 MS Windows system directories (continued)

`$AGILENT3070_ROOT\tmp`	A directory that is used by the 3070 software for storing temporary files and logs.
`$AGILENT3070_ROOT\util`	A directory that is used for storing a few utility files.

Editing Files

This section contains:

- **Forward-Slashes versus Back-Slashes in Command Lines Containing File Paths**, 8-8

- **Use BT-BASIC**, 8-8

- **How to Edit the System Config File to Match the Testhead Configuration**, 8-9

- **How to Resolve the Standard Config File from the System Config File**, 8-10

Forward-Slashes versus Back-Slashes in Command Lines Containing File Paths

A general rule for commands using a path to a directory or file is to use a forward-slash (/) for commands tied to a 3070 application, and use a back-slash (\) for operating system-related commands.

If a command line containing a file path fails to execute, it may be because the slash used is of the wrong type.

Reversing the slash(es) may resolve the issue.

This is because:

- Many Korn shell commands are used in the MS Windows environment, and require forward-slashes (/) in command lines containing file paths.

- In MS Windows, when opening a file from the **Start** > **Run...** menu, both forward-slashes (/) and back-slashes (\) are recognized.

- A command may be performed in or with some relationship to the MS-DOS environment, which can require back-slashes in command lines containing file paths.

Use BT-BASIC

BT-BASIC is the designated file-editing tool. Unless otherwise specified, editing described in this chapter is performed using **BT-BASIC**.

Korn shell, **vi**, and **viw** editors can also be used to edit files.

Reference information for all these tools:

- **BT-BASIC Quick-Reference** on page 8-17.

- **NT Korn Shell Quick Reference** on page 8-18.

- **vi and viw Editor Quick Reference** on page 8-21.

Open BT-BASIC

- Double-click the desktop **BT-BASIC** icon OR

  Click **Start** > **Programs** > **Agilent 3070** > **BT-BASIC**.

  BT-BASIC will open with the cursor on the command line.

Open a File in BT-BASIC

- From the command line, enter:

  ```
  get btgetenv$ ("AGILENT3070_ROOT") &
  "<path to the file>"
  ```

  For more information about this command, see **Use of the Root Directory Environment Variable in a BT-BASIC Window** on page 8-3.

Edit in BT-BASIC

- Press **F1** on the keyboard, if necessary, to toggle to the workspace.

  To move the cursor, use the keyboard arrow keys, and the **Insert Char**, and **Delete Char** keys.

Save in BT-BASIC

1 Press **F1** on the keyboard, if necessary, to toggle to the command line.

2 Enter:

  ```
  re-save
  ```

Exit BT-BASIC

1 Press **F1** on the keyboard, if necessary, to toggle to the command line.

2 Enter:

  ```
  exit
  ```

How to Edit the System Config File to Match the Testhead Configuration

If the testhead configuration has changed, the system config file MUST be updated to reflect the change.

Table 8-5 describes the process.

Table 8-5 Edit the system config file to match the testhead configuration

Task	Step
1 Open the system config file in a BT-BASIC window.	**a** Open a **BT-BASIC** window by double-clicking the desktop icon. **b** From the BT-BASIC command line, enter: `get btgetenv$ ("AGILENT3070_ROOT") & "/diagnostics/th1/config"`
2 Arrange or modify statements to reflect the actual testhead configuration.	Do this as required. See **Table 8-8** on page 8-17 for commonly used BT-BASIC commands.
3 Save and exit the system config file.	• Enter: 1) `re-save` 2) `exit`
4 Compile the system config file.	See **Compiling the System and Standard Config Files** on page 8-35.

How to Resolve the Standard Config File from the System Config File

If the system config file has changed it is good practice to edit the standard config file to reflect the changes.

This is a service to board test development programmers.

See **Table 8-6** to resolve the standard config file from the system config file.

Figure 8-1 on page 8-15 illustrates the concept.

The desired end result is to copy the `cards ...`, `serial ports ...`, `supplies ...` and `ports ...` statements from the system config file to the standard config file.

No changes to the system config file are made.

Table 8-6   Resolve the standard config file from the system config file

Task	Step
1 Make a backup copy of the standard config file:	**a** Open a **BT-BASIC** window by double-clicking the desktop icon.
	b At the prompt, type:
	`msi btgetenv$ ("AGILENT3070_ROOT") & "/standard"`
	c `copy "config" over "config.temp"`
2 Open the standard config file:	**a** Type:
	`get "config"`
3 Open the system config file in a new **BT-BASIC** window:	• At the new **BT-BASIC** window command line, enter:
	`get btgetenv$ ("AGILENT3070_ROOT") & "/diagnostics/th1/config"`
4 Arrange the two **BT-BASIC** windows so that each can be readily accessed.	

Table 8-6 Resolve the standard config file from the system config file (continued)

Task	Step
5 Copy the appropriate statements from the system config file to the clipboard buffer:	In the **BT-BASIC** window containing the system config file: **a** Press **F1** on the keyboard to enter the workspace. **b** Locate the `module <number>` that contains un-commented `cards 1 ...` statements using the **arrow** keys or the **Prev** and **Next** keys. **c** Scroll the text up until the `end module` statement is visible. **d** Click and drag with the mouse to highlight the text including the `ports ...` statement The highlighted text is now copied in the clipboard buffer.

	NOTE
	Do not include `probe`, `debug port`, `bank`, or `end bank` statements.
	These statements are not valid in the standard config file.

Table 8-6   Resolve the standard config file from the system config file (continued)

Task	Step
6 Paste the copied text in the standard config file:	**CAUTION** ⚠️ Do not delete the `! Specify instrument ...` through `! connect ...` statements. **a** Activate the window containing the standard config file by clicking on the window border. **b** Press **F1** on the keyboard to enter the workspace. **c** Move the cursor immediately below the `module <number>` statement that corresponds to the `module <number>` statement copied in the previous task. ■ Take care not to overwrite other lines. **d** Click the right mouse button. The text from the buffer will be inserted into the standard config file.
7 Verify that each un-commented `module <number>` and `end module` statement in the system config file is un-commented in the standard config file.	

Table 8-6   Resolve the standard config file from the system config file (continued)

Task	Step
8 Save , then exit the standard config file:	**a** In the window containing the standard config file, press **F1** to return to the command line.
	b Enter:
	1) `re-save`
	2) `exit`
9 Exit the system config file without saving it:	**a** In the window containing the system config file, press **F1** to return to the command line.
	b Enter:
	`exit`
10 Compile the standard config file.	Instructions are given in **Compiling the System and Standard Config Files** on page 8-35.

Figure 8-1   Copying configuration information

$AGILENT3070_ROOT/standard/config
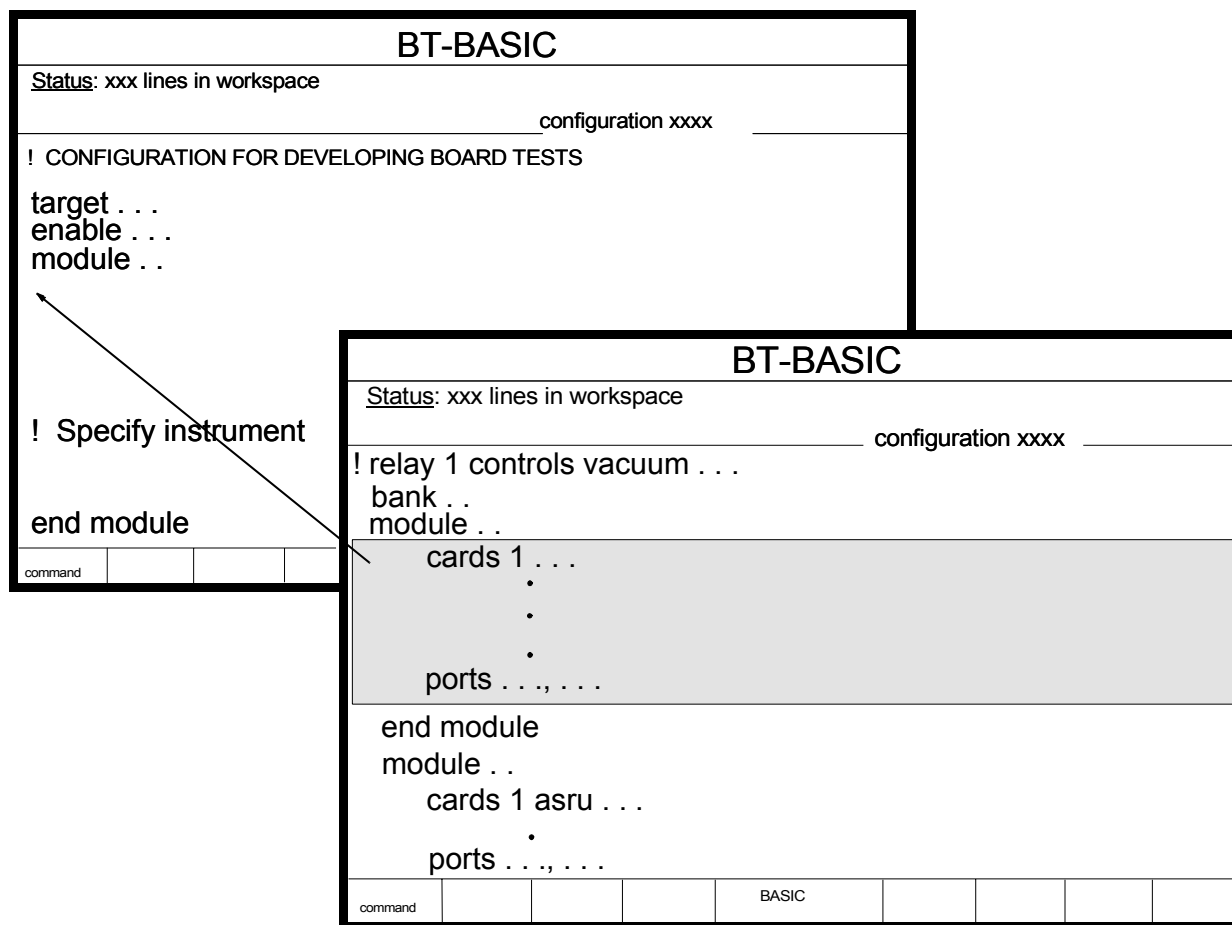
$AGILENT3070_ROOT/diagnostics/th1/config

MS Windows Quick-Reference

See **Table 8-7** for a MS Windows quick-reference.

Table 8-7   MS Windows quick-reference

To Do This...	Enter This...
• Kill processes and applications • Monitor CPU and memory usage	Open the MS Windows Task Manager: **a** Hold down the <Ctrl><Alt><Delete> keys at the same time (or right-click on the toolbar). **b** Click **Task Manager...**
• View error logs • Perform diagnostics • Use other various administrative tools	Open the MS Windows Event Viewer: **a** Click **Start** > **Settings** > **Control Panel**. **b** Double-click **Administrative Tools**, then select the appropriate application.

BT-BASIC Quick-Reference

Table 8-8 lists some commonly used BT-BASIC statements.

Additional BT-BASIC information is given in **Editing Files** on page 8-8.

> **NOTE**
>
> If uncertain whether to use forward-slashes or back-slashes, see **Forward-Slashes versus Back-Slashes in Command Lines Containing File Paths** on page 8-8.

> **NOTE**
>
> For a more complete list of BT-BASIC statements, see the *Agilent 3070 Family Users' Manual* Quick Reference Guide available in the online User manuals or on paper as part number E9900-13602.

Table 8-8 Commonly used BT-BASIC statements

BT-BASIC Statement	Statement Function
`msi btgetenv$ ("AGILENT3070_ROOT") & "<path to the file>"`	Change to file location
`get btgetenv$ ("AGILENT3070_ROOT") & "<path to the file>"`	Retrieve an existing file
`save "<filename>"`	Create a new file
`re-save`	Save an existing file
`compile "<filename>"`	Compile a file
`compile "<filename>";testhead`	Compile a testhead file
`findn "<string expression>"`	Find the next occurrence of a string expression
`exit`	Quit BT-BASIC

NT Korn Shell Quick Reference

Although the operating system is MS Windows, a number of 3070 UNIX commands are valid in the Korn shell.

See **Table 8-9** for a Korn shell quick reference. Keyboard keys are in { }.

For complete information about a command, at a Korn shell window prompt, enter:

```
man <command_name>
```

Table 8-9   Korn shell quick reference

To Do This . . .	Enter This . . .
Working with directories	
Show current working directory	`pwd`
Change directory	`cd <pathnames>`
Change to home directory	`cd`
Create a directory	`mkdir <directoryname>`
Remove and (empty) directory	`rmdir <directoryname>`
Display permissions for a directory	`ls -ld <directoryname>`
Working with files	
List files and directories in current directory	`ls`
List all files or directories, including hidden ("dot") files	`ls-a`

Table 8-9   Korn shell quick reference (continued)

To Do This . . .	Enter This . . .
List files, and show directories with / and executables with *	`ls -F`
Display permissions for a file	`ls -l <filename>`
Create or edit a file	`vi <filename>` or `viw <filename>`
Display file contents	`more <filename>` (q to quit) (v to vi)
Copy a file with permissions and owners	`cp -p <file1> <file2>`
Move a file to a new filename	`mv <old_file> <new_file>`
Append file1 onto the end of file2	`cat <file1> >> <file2>`
Remove a file	`rm <filename>`
Finding and organizing	
Find file(s) beginning with x in the current and sub-directories	`find . -name 'x*' -print`
Find all occurrences of word in all files in the current directory	`grep word *`
Display date and time	`date`
Display manual page for `<command name>`	`man <commandname>`
Find name of current host system	`hostname`
Find current system information	`uname -a`
System operations	
Clear screen	clean

Table 8-9   Korn shell quick reference (continued)

To Do This . . .	Enter This . . .
Exit / close Korn shell window	`exit`
Set Korn shell for vi	`set -o vi`
Edit the command line (in Korn shell set for vi)	`{ESC}` (use vi commands)
Recall previous command line (in Korn shell set for vi)	`{ESC}k` (back) or `j` (forward)
Execute previous command line (in Korn shell set for vi)	`{Return}` (when line is displayed)
List current process status and PIDs	`ps -ef`
Redirect input from a file to a command	`command < infile`
Connect two processes with a "pipe"	`command1	command2`
Network operations	
Invoke ftp and connect to remote host	`ftp <remove_hostname>`
Set transfer mode to ASCII	`ascii`
Set transfer mode to binary	`bin`
Copy a file using ftp from remote_hostname	`get <remote)file>`
Copy a file using ftp from the local current directory to current directory on the remote_hostname.	`put <local_file>`
Exit ftp	`bye`

vi and viw Editor Quick Reference

See **Table 8-10** for a vi and viw editor quick reference.

Keyboard keys are in { }.

NOTE

If uncertain whether to use forward-slashes or back-slashes, see **Forward-Slashes versus Back-Slashes in Command Lines Containing File Paths** on page 8-8.

Table 8-10   vi and viw editor quick reference

To Do This . . .	Enter This in Command Mode . . .
Getting started with vi	
Create or edit a file in a Korn shell window	`vi <filename>`
Create or edit a file in a vi window	`viw <filename>`
Make sure you are in command mode	`{ESC}`
Show if you are in command or insert mode	`:set showmode`
Find out what file you are in	`{CTRL}g`
Moving within a file	
Move the cursor left or right	`h` or `l` or arrow keys
Move the cursor up or down	`k` or `j` or arrow keys
Cursor to end of line	`$`
Cursor to beginning of line	`o` (Zero) or `^`

Table 8-10 vi and viw editor quick reference (continued)

To Do This . . .	Enter This in Command Mode . . .
Cursor to end of file	`G`
Cursor to line `<n>`	`<n>G`
Inserting text	
Insert text at the cursor position	`i`
Insert a new line after the current line	`o` (capital)
Insert (Append) text after the cursor position	`a`
Backspace to overwrite previous character (in Insert Mode)	`{CTRL}h` or `{Backspace}`
Replace single character	`r <character>`
Replace until {ESC} is pressed	`R`
Deleting text	
Delete characters at cursor	`x`
Delete word (cursor at beginning of word)	`dw`
Delete the entire line at the cursor position	`dd`
Delete from cursor to end of the current line	`D`
Delete from cursor to end of the file	`dG`

Table 8-10 vi and viw editor quick reference (continued)

To Do This . . .	Enter This in Command Mode . . .
Moving text	
Join lines of text	`J`
Copy a line into a buffer	`yy`
Put copied or deleted text line from buffer after cursor line	`p`
Read in another file after cursor line	`:r <filename>`
Searching text	
Search forward for <words>	`/<words>`
Search backward for <words>	`?<words>`
Repeat the previous search for words	`n (next) or N (previous)`
Saving and printing files	
Save file in same filename	`:w`
Save file to a new filename	`:w <new_filename>`
Exit from file without saving changes	`:q!`
Overwrite another existing file with this file	`:w! or wq!`
Save and exit from the vi editor	`:wq`

Table 8-10 vi and viw editor quick reference (continued)

To Do This . . .	Enter This in Command Mode . . .
Repairing mistakes	
Undo the previous action	`u`
Restore a line to its previous state	`U`
Restore ("put") last delete	`p`
Restore current file to last saved text and disregard changes	`:e!`
Undo last edit	`u` (repeat to toggle)
Recover a file after a system interruption (from the Korn shell)	`vi -r <filename>`

Codewords

Codewords are pre-installed at the factory and normally do not require adjustment.

Introduction

The capabilities of a 3070 system are based on the codewords installed.

Codeword information is used by the system config file compiler and allows confirmation that the hardware and the supported software features are compatible.

Install Codewords

Instructions for installing codewords are included with the software license(s).

Verify Installed Codewords

To verify the codewords:

a Click **Start** > **Programs > Accessories**.

b At a command window prompt, enter:

   codeword -l (el, not one)

Compile the Two Config Files

CAUTION

⚠ If the codewords have changed in any way, it will be necessary to compile both the system and standard config files. Instructions are given in **Compiling the System and Standard Config Files** on page 8-35.

CAUTION

⚠ Incorrectly entered codewords, blank lines or spaces before or after a codeword may cause errors when compiling the config files. User and Operator logins may not boot if the $AGILENT3070_ROOT/lib/.enable file contains invalid information. Codeword order does not make any difference.

System Config File Specifics

The path to the system config file is:

`$AGILENT3070_ROOT/diagnostics/th1/config`

It must match the actual testhead card configuration.

It will be necessary to edit the system config file if the testhead cards or locations of the testhead cards have changed.

To edit the system config file:

1 Login as `service3070` (default password is `service`).

2 At a **BT-BASIC** window prompt, enter:

```
msi btgetenv$ ("AGILENT3070_ROOT") &
"/diagnostics/th1"
```

3 Enter:

```
get "config"
```

4 Edit the file to match the actual testhead card configuration.

5 Enter:

```
re-save
```

6 Compile the changed system config file. See **Compiling the System and Standard Config Files** on page 8-35

The "Official" and "Actual" System Config Files

The "official" system config file is the system config file as when the system was shipped.

It is contained on a printout shipped with the system, and can be used as a model if it should be necessary to customize the system config file.

The "actual" system config file is the system config file in use which reflects the actual cards and card locations in the testhead.

If the System Config File is Corrupt

One of the `sys.config.xxx` templates can be copied from the `$AGILENT3070_ROOT/diagnostics` directory and edited to match the actual system configuration.

> **NOTE**
>
> Changes to the system config file should be reflected in the standard config file. See **Standard Config File Specifics** on page 8-29.

Descriptions of Some Statements in the System Config File

The `testhead name` Statement

The `testhead name` statement in the system config file identifies, via the `hosts` file, the block in the `bootptab` file that contains the hardware and internet protocol addresses for the System Card and ControlXT Card.

The `testhead name` statement in the system config file includes only the modules that are present; for a four-module system it looks like:

```
testhead name "testhead1" "module3" "module2"
"module1" "module0"
```

The System Card is represented by `testhead1`

The ControlXT Card in each module is represented by `module<n>`

Modules are mapped in the `hosts` file. Using this information, specific hardware addresses (HAs) can be determined in the `bootptab` file.

The `line frequency` Statement

In this statement, the unused frequency is commented. For example, if the system power is connected to 60 hertz, `50` is commented.

> **NOTE**
>
> "Commented" means that the comment character, an exclamation mark (!), has been placed at the beginning of a line.
>
> "Un-commented" means the "!" has been deleted from the beginning of the line.

The `relay` Statement

See **Vacuum Control** on page 8-42.

The `cards <keywords>` Statements

These statements identify to the system which cards are installed and where they are installed.

See **Table 8-15** on page 8-44 for available 3070 testhead cards with diagnostics names, `cards <keywords>` statements, pattern applications rates and part numbers.

The `cards <keywords>` statements can be delimited by commas (,); a range can be separated by the word "to."

Valid examples are:

- `cards 2, 3, 4, 5 hybrid standard double density`
- `cards 2 to 5 hybrid standard double density`
- `cards 2, 4, 7 to 11 hybrid standard double density`

> **NOTE**
>
> Single-density Hybrid Pin Cards cannot be used.

The `supplies <keywords>` Statements

Numbering of the supplies in the `supplies <keywords>` statements is arbitrary.

The software will accept any mapping of supply numbers to modules.

If the customer plans to share board test fixtures with other systems, it is possible they may have modified the default power supply setting.

If so, reconcile the supplies numbering with existing systems.

Standard Config File Specifics

This section contains:

Introduction

The path to the standard config file is:

`$AGILENT3070_ROOT/standard/config`

It should reflect the complete testhead resources available for the board test developer.

The standard config file as when the system was shipped:

■ Has the correct `target <keywords>` statement.

■ Includes commented `enable <keywords>` statements for optional components.

The Board Config File

The board test developer can use the standard config file as a template when developing a board config file.

The board config file is located in each board's subdirectory, and is a copy or subset of the standard config file.

The board config file can describe the resources in any one system or system subset.

Standard Config File Syntax Similarities to and Differences from the System Config File

The `cards <keywords>` syntax is the same for the system config file and the standard config file.

However, some of the syntax for the standard config file is different from that of the system config file.

Statements Allowed in the Standard, System, and Board Config Files

- `target`
- `enable`
- `module`
- `end module`
- `access ports`
- `boards wired in parallel`

- `cards`
- `supplies`
- `ports`
- `boards`
- `connect`

NOTE

`connect` statements allow programmers to name and define the use of external ports.

Usually these can remain as-shipped until the customer decides how to use these ports.

Statements Not Allowed in either the Standard or Board Config Files, but Are Allowed in the System Config File

- `testhead name`
- `line frequency`
- `board handler`
- `relay <x> controls vacuum <y>`

- `bank`
- `end bank`
- `probe`
- `debug port`

Descriptions of Some Statements in the Standard Config File

The `target <keywords>` Statements

A `target <keywords>` statement is needed in each board config file.

See **Table 8-11** for factory default `target <keywords>` statements.

NOTE

The `target <keywords>` statement should be the first un-commented statement in the file and must exist before the `cards <keywords>` statements.

Table 8-11 Factory default `target <keywords>` statements

Pattern Application Rate	`target <keyword>` Statement
6 MP/s (megapatterns-per-second)	`target hp3073 standard`
12 MP/s	`target hp3070 advanced`
20 MP/s	`target high accuracy`

See **Table 8-12** for 3X72 process test system default `target <keywords>` statements.

Table 8-12 3X72 process test system default `target <keywords>` statements

Product Description	`target <keyword>` Statement
Agilent 3172-U Unpowered Test (up to 2modules)	`target unpowered`
Agilent 3072-U Unpowered Test (up to 4 modules)	`target unpowered`
Agilent 3172-P Powered Test (up to 2 modules)	`target unpowered` `enable powered testing`
Agilent 3072-P Powered Test (up to 4 modules)	`target unpowered` `enable powered testing`

The `enable <keywords>` Statements

These statements are used in combination with codewords to selectively enable software functionality.

CAUTION

⚠ `enable <keywords>` statements should exist after the `target <keywords>` statements, and must be outside of a module block.

The programmer will un-comment the correct `enable <keywords>` statements which correspond to standard or optional software features as the board config file is developed.

NOTE

Codewords must be installed to enable optional software features. For more information, see **Codewords** on page 8-25.

Table 8-13 contains some enable `<keywords>` statements in the standard config file.

Table 8-13 Some `enable <keywords>` statements in the standard config file

`enable <keywords>`	Functional Description:
advanced boundary scan	Allows more advanced techniques in boundary scan testing, such as powered shorts testing.
all high accuracy resources	For double density, high accuracy HybridPlus Cards, this option enables channel resources to pins that would otherwise be used for extended grounding on XG-50 fixtures. Because the resource assignments change, this option cannot be used with XG-50 fixtures.
combo test	Enables both in-circuit and functional testing.
common delimiter	Enables Interoperability between UNIX and MS Windows.
connect check	Enables Agilent Connect Check.
dual well shared wiring	Enables Dual-Well Shared Wiring.

Table 8-13   Some `enable <keywords>` statements in the standard config file

enable <keywords>	Functional Description:
drivethru	Enables the testing of digital devices through series resistors using Agilent TestJet technology. Use the Agilent Drive Thru Test in combination with the Agilent Access Consultant to identify and selectively remove nonessential probing locations.
express fixturing	Allows Agilent SimPlate Express or cassette fixtures for your board test. If this option is not enabled, only an Agilent SimPlate Fixture can be used.
flash70	Enables flash memory programming mode.
flash isp	Enables flash isp software, which supports new data formats. Test system must have ControlXTP cards installed to utilize this feature.
incircuit test	Enables automatic in-circuit test generation for systems which do not have it.
magic	Enables Agilent MagicTest circuit analysis mode.
multiple board versions	Enables Agilent Multiple Board Versions.
paneltest	Enables software that helps you develop tests for multiple-board panels on one fixture.
pld isp	Enables native PLD programming on the 3070 and supports CPLD programming with STAPL, SVF, Jam and JBC file types.
polarity check	Enables Polarity Check testing.
powered testing	Allows limited powered testing on an Agilent 3072 system (a maximum of two HybridPlus Cards, one HybridPlus and one ChannelPlus Card, or one HybridPlus and one AccessPlus Card per module).
silicon nails	Enables automatic generation of silicon nails ITL test files.

Table 8-13   Some `enable <keywords>` statements in the standard config file

enable <keywords>	Functional Description:
`testjet`	Enables the TestJet testing technique on your board. This option is automatically enabled on the Agilent 3072 system.
`throughput multiplier`	Allows testing up to four boards simultaneously (one per module), which increases board throughput. It can only be used with the `paneltest` option.

Compiling the System and Standard Config Files

For changes to the system config file and the standard config file to be enabled, they must be compiled.

NOTE

If codewords have been modified in any way, both the system config and the standard config files must be compiled.

To compile the config files:

1 Login as `service3070` (default password is `service`)

2 Open **BT-BASIC**.

3 Compile the system config file. At the command line, enter:

a `msi btgetenv$ ("AGILENT3070_ROOT") &`
   `"/diagnostics/th1"`

b `compile "config"; testhead`

4 Compile the standard config file. At the command line, enter:

a `msi btgetenv$ ("AGILENT3070_ROOT") &`
   `"/standard"`

b `compile "config"`

5 When the config files have compiled without errors, exit BT-BASIC.

The `bootptab` File

This section contains:

- **Hardware Addresses**, 8-36

- **IP Addresses**, 8-37

Hardware Addresses

Each control card has a unique hardware address.

If a control card in the testhead is changed, the `bootptab` file must be edited to reflect a changed hardware address.

> **CAUTION**
>
> ⚠ Changes made to the `bootptab` file MUST be done through the **Bootp Server** program.

Given below is a method to edit the `bootptab` file:

1 Login as `service3070` (password is `service`).

2 Make a backup copy. One example:

> **NOTE**
>
> The environment variable **$SystemRoot** is usually set to `c:\winnt\`

a Open **Windows Explorer**:

- For Windows NT, click **Start** > **Programs** > **Windows NT Explorer**.

- For Windows 2000, click **Start** > **Programs** > **Accessories** > **Windows Explorer**.

b Navigate to:

`c:\winnt\system32\drivers\etc\`

Right-click on the `bootptab` file then select **copy**.

c Navigate to:

`C:\Temp`

d Right-click and select **paste**.

An unchanged copy is now in `C:\Temp`

3 Open **Bootp Server**:

a Click **Start** > **Settings** > **Control Panel**.

b Double-click **BOOTP Server NT**.

4 In the **BOOTP Server properties** window, click the **Clients** tab.

5 If a ControlXT Card was removed, delete its hardware address:

a Pull down the **Hardware Address** menu and select the address of the card you removed.

b Click **Delete**.

6 Add the hardware address of the ControlXT Card you are installing:

a Click **New.**

b Enter the hardware address of the ControlXT Card. The complete hardware address is typically `0060B0B2xxxx` (xxxx = the number on the card).

7 Configure the card's address:

a In the **Available options** menu, select the following three options one at a time and click **>>** to move them to the **Configured options** menu:

- **IP address >>**

- **Merit dump file >>**

- **Subnet mask >>**

b In the **Configured options** menu, select each option and click **Edit**.

Enter:

- **IP Address** = `10.3.112.4` for module 0
  `10.3.112.5` for module 1
  `10.3.112.6` for module 2
  `10.3.112.7` for module 3

- **Merit dump file** = This is a comment; enter the module number (e.g., `module 2`).

- **Subnet mask** = `255.255.255.0`

8 In the **BOOTP Server properties** window, click **Close**.

9 Restart the BOOTP Server:

a From **Control Panel** click **Administrative Tools**, then **Services**.

b Double-click **Weird Solutions BOOTP Server**.

c Click **Stop** > **Start** (wait).

10 Close the **Services** and **Administrative Tools** windows.

This completes the procedure.

IP Addresses

The `bootptab` file, in conjunction with the hosts file, manages IP addresses for the modules in the testhead.

See **The hosts File** on page 8-38 to view IP addresses for the testhead modules.

The `hosts` File

The path to the `hosts` file is:

- `$SystemRoot/system32/drivers/etc/hosts`

The `hosts` file must include these IP addresses:

`10.3.112.2 testhead1` (System Card)

`10.3.112.7 module3`

`10.3.112.6 module2`

`10.3.112.5 module1`

`10.3.112.4 module0`

Example 8-1 on page 8-39 shows a sample `hosts` file.

Test Device Communication

To verify connection to each of the devices listed in the `hosts` file:

1 Boot the testhead.

2 From a DOS window prompt, enter:

`ping <system name>` OR

`ping <IP address>`

Example 8-1   A sample `hosts` file

```
#
# This is a sample HOSTS file used by Microsoft TCP/IP for MS Windows.
#
# This file contains the mappings of IP addresses to host names. Each
# entry should be kept on an individual line. The IP address should
# be placed in the first column followed by the corresponding host name.
# The IP address and the host name should be separated by at least one
# space.
#
# Additionally, comments (such as these) may be inserted on individual
# lines or following the machine name denoted by a '#' symbol.
#
# For example:
#
#      102.54.94.97     rhino.acme.com          # source server
#       38.25.63.10     x.acme.com              # x client host

127.0.0.1       localhost
# 10.3.112.1   UNIX Controller uses this
# 10.3.112.10  MS Windows Controller uses this
10.3.112.2   testhead1
10.3.112.3   hpibgw
10.3.112.4   module0
10.3.112.5   module1
10.3.112.6   module2
10.3.112.7   module3
```

Device Files

This section contains:

Introduction

Management of devices on MS Windows controllers are very different than on UNIX controllers.

On MS Windows controllers, most devices are managed invisibly by the operating system. A small number of devices (primarily GPIB) are mirrored in the `$AGILENT3070_ROOT/dev` directory so that the 3070 software will execute properly.

Location of Device Files

Device files can be found in the directory:

`$AGILENT3070_ROOT/dev`

and are listed in **Table 8-14**.

Table 8-14

Device Files in `$AGILENT3070_ROOT/dev`		
gpio1	hpib1	dmm
null	scope	dmm_ref
ps0. . . ps11	hp3488	synth

If a DUT Power Supply is Replaced

Change the appropriate `ps<x>` file if the GPIB address of any power supply changes.

Example 2 shows the contents of the default `ps0` file. In the line:

`7,22`

`22` represents the GPIB address.

Example 8-2   Contents of the default `ps0` file

```
!!!! 26 0 1 664499475 0000
hpib7,22
```

DUT Power Supply Device Files

See **Table 8-18** on page 8-49 for DUT power supply GPIB addresses and device files.

Vacuum Control

Location of Vacuum Control Statements

These are contained in the system config file:

```
$AGILENT3070_ROOT/diagnostics/th1/config
```

Vacuum Control Specifics

The `relay <x> controls vacuum <y>` statements need to match the actual hardware configuration after the customer decides how to implement vacuum control.

For testheads without internal vacuum valves, the default statements are:

```
relay 1 controls vacuum 2,3
relay 2 controls vacuum 0,1
```

For testheads with the Agilent E9945A two-module internal vacuum system, the default statements are:

```
relay 1 controls vacuum 3
relay 2 controls vacuum 2
```

For testheads with the Agilent E9946A four-module internal vacuum system, the default statements are:

```
relay 1 controls vacuum 3
relay 2 controls vacuum 2
relay 3 controls vacuum 1
relay 4 controls vacuum 0
```

There is nothing special about the defaults except that each matches a configuration shown in the site preparation manual.

See the *Agilent 3070 / 79000 Family Site Preparation Manual* 03066-90114 for a drawing of this default vacuum hookup.

Modify the relay statements so they will work with your customer's hardware.

For example, to turn on all four vacuum ports with a single relay, the following statement might be used in the system config file:

```
relay 1 controls vacuum 0,1,2,3
```

Rotating the Testhead

CAUTION

Remove all objects, including the monitor / keyboard support arms, from the rotational path of the testhead.

During rotation, should the testhead hit anything, damage could result.

CAUTION

Remove the shipping bolts before attempting to rotate the testhead. Otherwise, damage can result.

1 Open the pod door.

2 Press and hold the testhead rotation switch inside the pod until the testhead rotates to the desired position.

There is also sometimes a testhead rotation switch on the rear of the pod.

NOTE

The PDU must be turned on for the testhead rotation switch to be active.

Testhead Cards

See **Table 8-15** for available testhead cards with diagnostics names, `cards <keywords>` statements, pattern applications rates and part numbers.

If Replacing the ControlXT Card

- The ROM from the old card must be removed and installed on the new card.

- Its hardware address in the system software must be changed.

NOTE

DO NOT change the hardware address of the System Card.

System Card / Control Card LAN Information

See **Testhead LAN and Serial Port MUX** on page 8-59.

Table 8-15 For MS Windows systems – supported testhead cards with diagnostics names, `cards <keywords>` statements, pattern applications rates and part numbers

Card Type	DGN Config Screen Name	`cards <keywords>` Statement in the System Config File	Pattern Application Rate (MP/s)	Part Number of the Card
Access	Access	`access`	6/12/20	E1061-66501
Analog	Analog	`analog`	6/12/20	E1121-66526
	Ana_DD	`analog double density`	6/12/20	E4000-66542
ASRU	ASRU_C	`asru c revision`	6/12/20	03066-66532
Control	Ctl_Xt	`control xt`	6/12/20	E4000-66512
Hybrid	H_StdDD	`hybrid standard double density`	6	E4000-66540

Table 8-15 For MS Windows systems – supported testhead cards with diagnostics names, `cards <keywords>` statements, pattern applications rates and part numbers (continued)

	H_StdDD2	hybrid standard double density	6	E4000-66550
	H_PpuDD	hybrid standard double density	6	E4000-66546
	HPpuDD2	hybrid standard double density	6	E4000-66550
	H_AdvDD	hybrid advanced double density	12	E4000-66544
	HAdvDD2	hybrid advanced double density	12	E4000-66550
	H_HA_DD	hybrid high accuracy double density	20	E4000-66545
	HHADD2	hybrid high accuracy double density	20	E4000-66550
	HStd_32	hybrid standard double density 32	6	E9900-66502
	HAdv_32	hybrid advanced double density 32	12	E9900-66502
	H_HA_32	hybrid high accuracy double density 32	20	E9900-66502
	HPpu_32	hybrid high accuracy double density 32	20	E9900-66502

CAUTION

⚠ If a `serial` keyword exists in the system config. file, then `serial ports` statements MUST be defined in the standard config file `/var/hp3070/diagnostics/th1/config` for each STC Plus Card. Also the serial test codeword MUST be in the `/var/hp3070/bin/.enable` file.

Table 8-15 For MS Windows systems – supported testhead cards with diagnostics names, `cards <keywords>` statements, pattern applications rates and part numbers (continued)

	STC_B	`serial b revision`	6/12/20	E1085-66502
	STC_B	`serial b revision with cables`	6/12/20	E1085-66502 with E1093-61601

DUT Power Supplies

Voltage Ranges

DUT power supplies are set at the factory to one of two configurations:

- Option 220 for line voltages of 200–220 volts.
- Option 240 for line voltages of 230–240 volts.

Table 8-16   DUT power supplies allowed

Product No.	Model No.	Description
44940A	6624A	4 outputs: 2 @ 0-7 V, 0-5 A or 0-20 V, 0-2 A and 2 @ 0-20 V, 0-2 A or 0-50 V, 0-0.8 A
44941A	6621A	2 outputs: 0-7 V, 0-10 A and 0-20 V, 0-4 A
E4034A	6634A	1 output: 1-100 V, 0-1 A
E3784A	6642A	1 output: 0-20 V, 0-10 A

Module Mappings

See **Table 8-17** for default DUT power supply mappings for each module.

Table 8-17   Default DUT power supply mappings for each module (rear view of testhead)

Module 0	Module 2
supplies hp6624 13 to 16 asru channels 1 to 4	! supplies hp6624 5 to 8 asru channels 1 to 4
! supplies hp6621 13 to 14 asru channels 1 to 4	supplies hp6621 5 to 6 asru channels 1 to 4

DUT Power Supplies Allowed

See **Table 8-16** for the DUT power supplies allowed.

Table 8-17   Default DUT power supply mappings for each module (rear view of testhead) (continued)

! supplies hp6624 23 to 24 asru channels 5 to 6	! supplies hp6624 19 to 20 asru channels 5 to 6
supplies hp6621 23 asru channels 5 to 6	! supplies hp6621 19 asru channels 5 to 6
! supplies hp6634 23 asru channels 5	supplies hp6634 19 asru channels 5
! supplies hp6634 24 asru channels 6	supplies hp6634 20 asru channels 6
! supplies hp6642 23 asru channels 5 to 6	! supplies hp6642 19 asru channels 5 to 6
Module 1	**Module 3**
supplies hp6624 9 to 12 asru channels 1 to 4	supplies hp6624 1 to 4 asru channels 1 to 4
! supplies hp6621 9 to 10 asru channels 1 to 4	! supplies hp6621 1 to 2 asru channels 1 to 4
! supplies hp6624 21 to 22 asru channels 5 to 6	supplies hp6624 17 to 18 asru channels 5 to 6
! supplies hp6621 21 asru channels 5 to 6	! supplies hp6621 17 asru channels 5 to 6
supplies hp6634 21 asru channels 5	! supplies hp6634 17 asru channels 5
supplies hp6634 22 asru channels 6	! supplies hp6634 18 asru channels 6
! supplies hp6642 21 asru channels 5 to 6	! supplies hp6642 17 asru channels 5 to 6

The commented ("!") statements illustrate that you cannot assign a power supply number (1 through 24) more than once in a testhead, and you cannot assign a channel number (1 through 6) more than once in a module.

For 307X systems with a support bay, if it is necessary to determine which DUT power supply is wired to which module, the DUT/ASRU cables E4000-61602 are labeled on both ends with the module numbers to which they are routed.

Agilent 317X systems use cable numbers E4000-61606 and E1170-61607.

GPIB Addresses and Device Files

If the DUT power supplies are functional, a supply's GPIB address can be determined by tracing the cabling to determine which supply is connected to the module.

If the supply has a front panel and is accessible, the GPIB address can be read from the front panel of the supply.

Table 8-18 lists DUT power supply GPIB addresses and device files. See **If a DUT Power Supply is Replaced** on page 8-40 for more information about DUT power supply GPIB addresses.

NOTE

The customer has the flexibility to modify the DUT power supply GPIB addressing.

Table 8-18 DUT power supply GPIB addresses and device files

Power Supply Connection	GPIB Address	Device File
Module 0, asru channels 1-4	22	`$AGILENT3070_ROOT/dev/ps0`
Module 1, asru channels 1-4	23	`$AGILENT3070_ROOT/dev/ps1`
Module 2, asru channels 1-4	24	`$AGILENT3070_ROOT/dev/ps2`
Module 3, asru channels 1-4	25	`$AGILENT3070_ROOT/dev/ps3`
Module 0, asru channel 5 or 5-6	26	`$AGILENT3070_ROOT/dev/ps4`
Module 0, asru channel 6	27	`$AGILENT3070_ROOT/dev/ps5`
Module 1, asru channel 5 or 5-6	28	`$AGILENT3070_ROOT/dev/ps6`
Module 1, asru channel 6	29	`$AGILENT3070_ROOT/dev/ps7`
Module 2, asru channel 5 or 5-6	1	`$AGILENT3070_ROOT/dev/ps8`
Module 2, asru channel 6	2	`$AGILENT3070_ROOT/dev/ps9`

Table 8-18 DUT power supply GPIB addresses and device files (continued)

Module 3, asru channel 5 or 5-6	3	`$AGILENT3070_ROOT/dev/ps10`
Module 3, asru channel 6	4	`$AGILENT3070_ROOT/dev/ps11`

To Change DUT Power Supply GPIB Addresses

For 307X systems only where the power supplies are mounted in a support bay:

- Open the support bay and find the correct power supply.

Systems without support bays have the power supplies mounted in the testhead:

- Panels must be removed from the testhead in order to access the front panel of the power supplies.

To change the GPIB address, press **ADDR** (beside the display), enter the desired address on the **ENTRY keypad**, and then press **ENTER** on the **ENTRY keypad**.

> **NOTE**
>
> If a power supply is split between two modules, the default GPIB address (and device file) is the one for the lower-numbered module.

Controller Cables and Devices

There are two supported MS Windows testhead controllers:

For the Kayak XU700, use

Figure 8-2 on page 8-53 with

Table 8-19 on page 8-54.

For the Visualize P600, use

Figure 8-3 on page 8-56 with

Table 8-20 on page 8-57.

Figure 8-2 Kayak XU700 cabling diagram
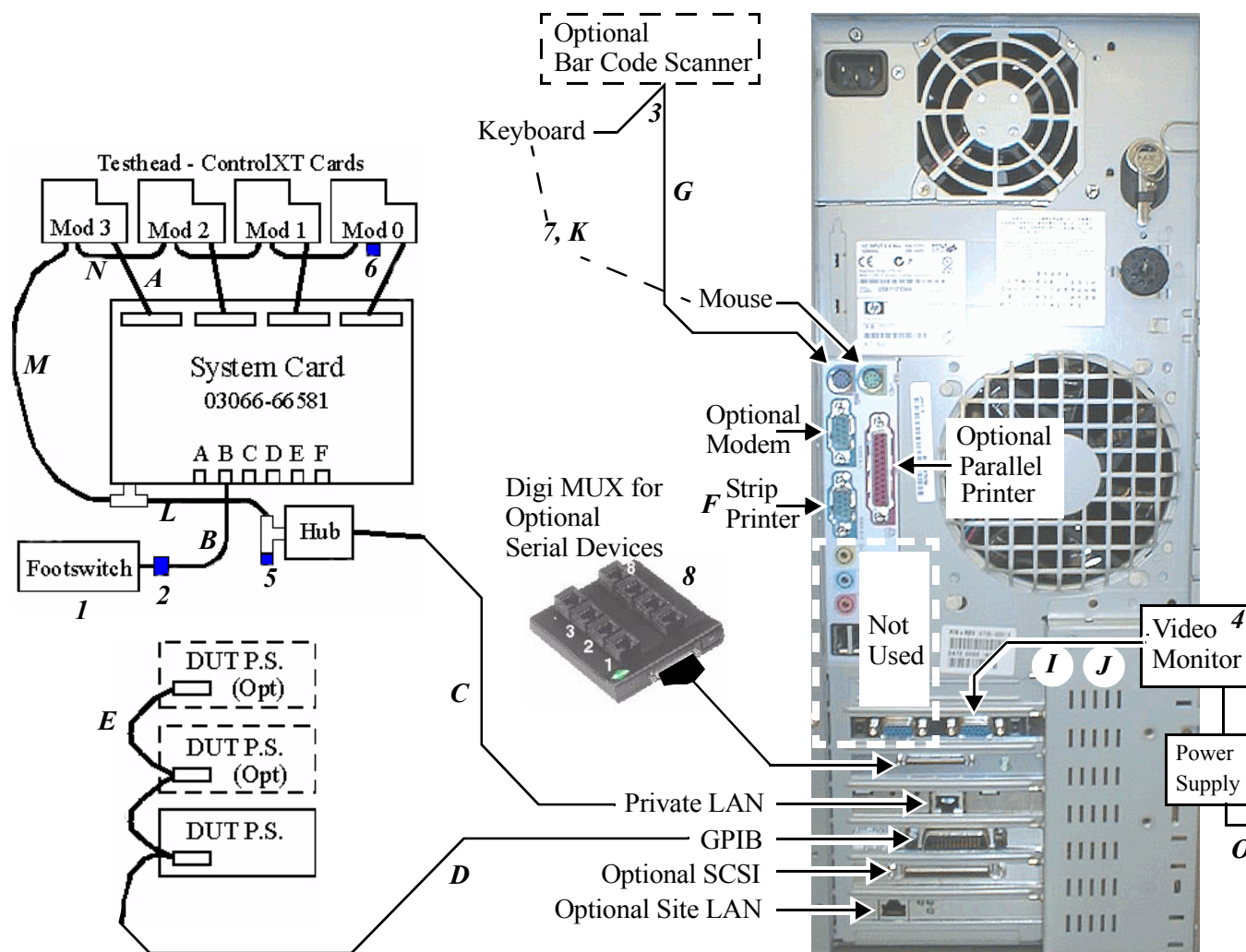
Table 8-19   Kayak XU700 cables and devices

Cables		
Figure 8-2 Reference	**Part Number**	**Description**
A	E4000-61628	Control Cable
B	8120-6713	Footswitch Extension Cable, RJ-11
C	8120-8728	LAN Cable, RJ-45 to RJ-45
D	E9927-61607	4-meter GPIB Cable (for TAMS 70488-10 card)
E	8120-3445	1-meter GPIB Cable
F	03066-61629	Strip Printer Cable, RS-232, DB9(f) to DB25(m) cross-conn., 3-m
G	8120-6751	Bar Code Scanner Cable
H	Not Used	Not Used
I	03066-61640	Video Extension Cable (1 for 327X / 79000, 2 for 307X / 317X)
J	D2800-80006	Video Cable
K	8120-6794	Keyboard / Mouse Extension Cable
L	8120-5371 or . . . 8120-3543	6-meter LAN Cable, BNC to BNC (for 307X and 317X) or . . . 2-meter LAN Cable, BNC to BNC (for 327X)
M	E4000-61630	LAN Cable, BNC to SMB for ControlXT Cards

Table 8-19   Kayak XU700 cables and devices (continued)

N	E4000-61629	LAN Cable, SMB to SMB for ControlXT Cards
O	8120-1763 2 ea. (327X) or 8120-1763 + 8120-4188 (307X and 317X) power cords	

Devices		
Figure 8-2 Reference	**Part Number**	**Description**
1	44902-60000	Footswitch with Cable
2	E4000-62102	Footswitch Adapter
3	0950-2946	Bar Code Scanner Wedge (optional) (p/o E3786A)
4	E9900-69301	NEC MultiSync LCD Flat Panel Display
5	1250-0207	50-ohm BNC Load / Termination
6	1250-2076	50-ohm SMB Load / Termination
7	A4030E	Keyboard and Mouse
8	1250-3154 1250-3156	Digi 77000707 EIA-232 AccelePort 8p controller PCI card Digi 76000527 EIA-232 AccelePort 8p interface box

Figure 8-3   Visualize P600C cabling diagram
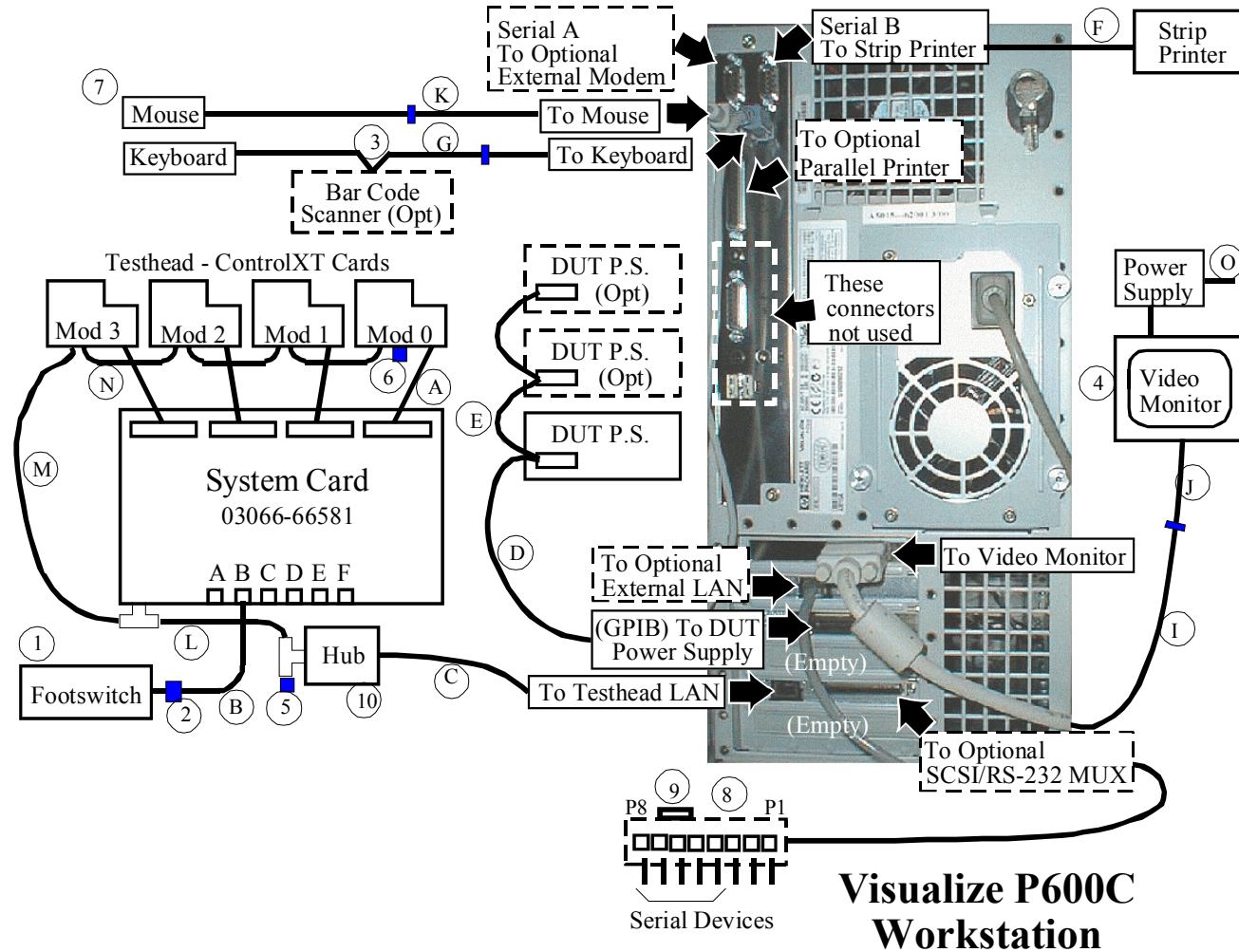
Table 8-20   Visualize P600C cables and devices

Cables		
Figure 8-3 Reference	**Part Number**	**Description**
A	E4000-61628	Control Cable
B	8120-6713	Footswitch Extension Cable, RJ-11
C	8120-8728	LAN Cable, RJ-45 to RJ-45
D	E9927-61607	4-meter GPIB Cable (for TAMS 70488-10 card)
E	8120-3445	1-meter GPIB Cable
F	03066-61629	Strip Printer Cable, RS-232, DB9(f) to DB25(m) cross-conn., 3-m
G	8120-6751	Bar Code Scanner Cable
H	Not Used	Not Used
I	03066-61640	Video Extension Cable (1 for 327X / 79000, 2 for 307X / 317X)
J	D2800-80006	Video Cable
K	8120-6794	Keyboard / Mouse Extension Cable
L	8120-5371 or . . . 8120-3543	6-meter LAN Cable, BNC to BNC (for 307X and 317X) or . . . 2-meter LAN Cable, BNC to BNC (for 327X)
M	E4000-61630	LAN Cable, BNC to SMB for ControlXT Cards

Table 8-20   Visualize P600C cables and devices (continued)

N	E4000-61629	LAN Cable, SMB to SMB for ControlXT Cards
O	8120-1763 2 ea. (327X) or 8120-1763 + 8120-4188 (307XPC and 317XPC) power cords	

Devices		
Figure 8-3 Reference	**Part Number**	**Description**
1	44902-60000	Footswitch with Cable
2	E4000-62102	Footswitch Adapter
3	0950-2946	Bar Code Scanner Wedge (optional) (p/o E3786A)
4	E9900-69301	NEC MultiSync LCD Flat Panel Display
5	1250-0207	50-ohm BNC Load / Termination
6	1250-2076	50-ohm SMB Load / Termination
7	A4030E	Keyboard and Mouse
8	E4000-37900	SCSI/RS-232 w/E4000-37911 pwr sup, SCSI-2 cable (p/o E3788A)
9	A1658-62016	SCSI Terminator
10	J3128A	Agilent AdvanceStack 10Base-T Hub-8E with 0950-3612 power supply

Testhead LAN and Serial Port MUX

Testhead LAN IP Address

The testhead LAN IP address is `10.3.112.10` with a subnet mask of `255.255.255.0`

System Card / Control Card LAN Information

The System Card and the ControlXT Cards communicate via a private LAN.

Because the System Card and ControlXT Card IP addresses are local to each system, their assigned addresses are the same from one system to the next.

However, their hardware addresses (`ha`) are unique in each system.

The hardware address of the System Card is printed on its sheet-metal panel.

The last four digits of the ControlXT Card's hardware address are printed on one of its ROMs; it's the last line (hexadecimal number) on the label.

To verify communication to the testhead (system card), use the `ping` command.

1 Power-on the testhead.

2 From a DOS prompt, enter:

```
ping 10.3.112.2
```

If the communication test fails, check that the LAN ports in the testhead are terminated properly.

See **Controller Cables and Devices** on page 8-52 for the locations of the LAN terminations.

Serial Port MUX

The Kayak 700 controller contains a Digi AccelePort Xp serial port MUX as standard equipment.

This 8-port EIA-232 serial MUX adapter provides eight 8-pin RJ-45 EIA-232 ports for supporting PPU, JOT, and other optional serial-controlled devices.

> **CAUTION**
>
> ⚠ Many SCSI adapters use the same HD-68 connector type as the AccelePort Xp. DO NOT plug SCSI devices into the Digi connector, and DO NOT plug Digi peripheral cables into SCSI adapters. Damage can result.
>
> Connect cabling for serial devices as listed in **Table 8-21** or communication errors can result.

Table 8-21 Connector box MUX assignments

Serial Port	Reserved For
1	Pay-Per-Use (PPU)
2	JOT Board Handler
3—4	JOT Bar Code Readers
5—8	Other EIA-232 Devices

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